

P9070

PC INTERCONNECT

User's Guide



Hackerspace Arnhem
Broekstraat 18
6828 PZ Arnhem
www.hack42.nl

#42
HACKERSPACE ARNHEM

PHILIPS

A publication of:

Philips Telecommunicatie en Data Systemen Nederland B.V.
SSS - Training & Documentation
P.O. Box 245
7300 AE Apeldoorn, The Netherlands

Printed in The Netherlands, March 1987

All rights are reserved. Reproduction in whole or in part is prohibited without the written consent of the copyright owner.

The information contained in this publication is accurate to the best of Philips' knowledge. However, Philips disclaims any liability resulting from the use of this information.

Order number: 5122 995 11831

Manual number: G317A





PC Interconnect

User's Reference Manual

Although 4020 and modem support is shown, it is not available in this release.

**Published by
Motorola Computer Systems**

© Motorola Inc. 1986

This manual is copyright
and all rights are reserved.
The manual may not,
in whole or part, be copied,
translated or transferred
to any electronic medium
or reduced to machine
readable form without
the prior written consent
of Motorola Inc.

Motorola and the Motorola
logotype are registered
trademarks of Motorola Inc.

UNIX is a trademark of
AT & T Bell Laboratories, Inc.

IBM is a registered trademark of
International Business Machines, Inc.

MS-DOS is a trademark of
Microsoft Corporation.

PC-DOS is a trademark of
International Business Machines, Inc.

Q1 and Qoffice are both trademarks of
Quadratron Inc.

Hayes is a trademark of
Hayes Microcomputer Products, Inc.

Contents

General Introduction

The Connection	i
Using PC Interconnect	v
System Start-up	v
The Format of PC Interconnect Menus	vi
The Manual	vii

System Options

Section 1

Introduction	1.1
1 Automatic Login	1.3
2 Terminal Mode	1.7
3 DOS	1.9
4 File Transfer	1.11
SEND PC File to UNIX	1.12
BRING UNIX File to PC	1.14
BACKUP Directory	1.15
RESTORE Directory	1.18
LIST Files	1.20
CHANGE Directory	1.21
5 Remote Print	1.23
PRINT PC File	1.25
FORMAT and PRINT PC File	1.26
Line Numbering	1.27
Copies	1.28

DISPLAY Queue	1.29
CANCEL Print Job	1.30
LIST PC Files	1.31
SELECT Printer	1.32
6 Electronic Mail	1.33
EDIT Mail Message	1.35
ERASE Message	1.37
SEND Message	1.38
SEND Mail from PC File	1.39
PRINT Message	1.40
SAVE Message in PC File	1.41
LIST UNIX Users	1.42
VIEW Received Mail	1.43
VIEW Message	1.45
DELETE Message	1.46
PRINT Message	1.47
FORWARD Message	1.48
SAVE Message	1.49
7 Disconnect from Remote Host	1.51
8 EXIT PC Interconnect	1.53
9 SOFTKEY Menu	1.55

Introduction	2.1
The Softkeys Menu	2.1
1 The Structure of an SKP	2.3
Title	2.3
Keywords	2.4
Strings	2.5
Comments	2.5
2 The Softkey Options	2.7
EDIT Key Sequence	2.8
DELETE Key Sequence	2.9
COPY Key Sequence	2.10
MOVE Key Sequence	2.11
3 Automatic Login	2.13
4 This Page Intentionally Left Blank	2.15
5 DOS	2.17
6 File Transfer	2.19
SEND PC File to UNIX	2.20
BRING UNIX File to PC	2.21
BACKUP Directory	2.22
RESTORE Directory	2.24
LIST PC Files	2.26
LIST UNIX Files	2.27
CHANGE PC Directory	2.28
CHANGE UNIX Directory	2.29
7 Remote Print	2.31
PRINT PC File	2.32
FORMAT and PRINT PC File	2.33
Line Numbering	2.34

Copies	2.35
DISPLAY Queue	2.36
CANCEL Print Job	2.37
LIST PC Files	2.38
SELECT Printer	2.39

8 System Administration 2.41

9 Disconnect from Remote Host 2.43

10 Examples 2.45

Example 1 2.45

Example 2 2.46

TM220 Emulation

Section 3

Introduction	3.1
1 Keyboard Emulation	3.3
TM220 Emulated Key Positions	3.4

System Administration

Section 4

Introduction	4.1
1 Summary Menu	4.3
EDIT Configuration	4.4
SELECT Configuration	4.5
CREATE Configuration	4.6
REMOVE Configuration	4.7
MODIFY Configuration	4.8
2 System Configuration Menu	4.9
Login Name	4.10
Node Name	4.11
Line Type	4.12
Telephone Number (or Network Address)	4.13
Printer	4.14
Translate	4.15
Terminal Type	4.16
Access to Communications Setup Menu	4.17

3 Communications Setup Menu	4.19
Baud Rate	4.20
Data Bits	4.21
Parity Checking	4.22
Stop Bits	4.23
XON/XOFF Protocol	4.24
Modem Type	4.25
Idle Timeout	4.26
Break Length	4.27
Modem Timeout	4.28
RETURN to System Configuration Menu	4.29
4 System Administration Examples	4.31
DIRECT Connection	4.32
DIAL-UP Connection	4.33
LEASED Line Connection	4.34
4020 Connection	4.36

System Installation

Section 5

Introduction	5.1
---------------------	-----

Technical Reference

Section 6

4 The MODEMCAP File	6.1
The Format of pci.mod	6.1
Details of Capabilities	6.2

Appendix A

Single Keys	7.1
--------------------------	-----

Appendix B**Ctrl and ESC Sequences for VT100 and**

TM220 Emulation	7.3
------------------------------	-----

VT100 and TM220 Ctrl Sequences	7.3
--------------------------------------	-----

VT100 ESC Sequences	7.4
---------------------------	-----

TM220 ESC Sequences	7.6
---------------------------	-----

TM220 Exceptions	7.13
------------------------	------

AMPEX220 Exceptions	7.15
---------------------------	------

Appendix C

Character Mapping and Translation	7.17
--	------

CRLF Translations	7.17
-------------------------	------

Character Mapping	7.18
-------------------------	------

Appendix D

Line Signal Behavior	7.21
-----------------------------------	------

Direct Connection	7.22
-------------------------	------

Dial-up Connection	7.22
--------------------------	------

Leased Line	7.23
-------------------	------

4020 Codex Entryway	7.23
---------------------------	------

Appendix E

Installing PC Interconnect	7.25
---	------

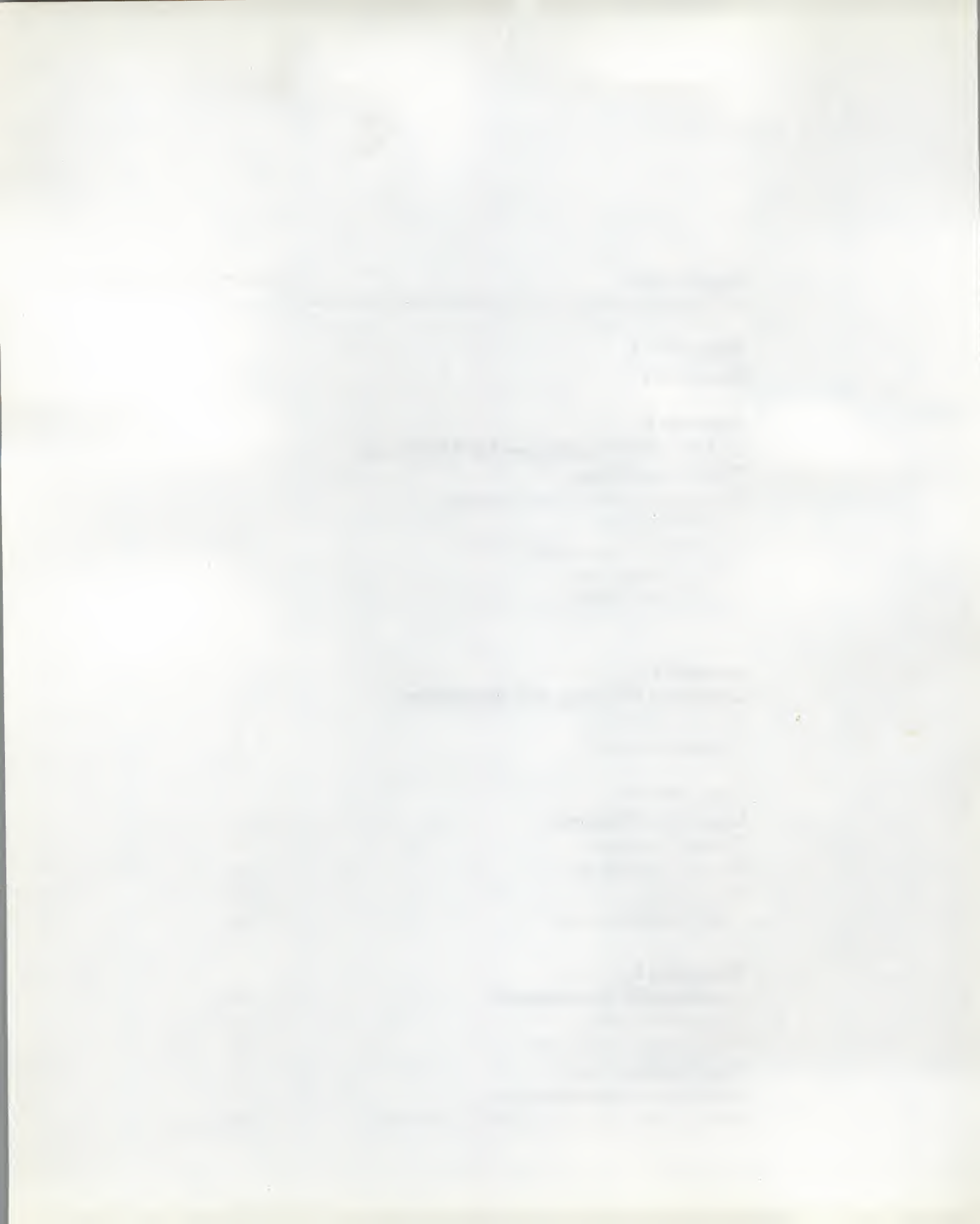
Distribution Media	7.25
--------------------------	------

Making a Backup Diskette	7.26
--------------------------------	------

First-Time Installation	7.28
-------------------------------	------

Upgrading an Existing System	7.31
------------------------------------	------

Important Information for Using the Product	7.32
---	------



General Introduction

PC Interconnect, from Motorola, is a software package designed to provide an effective way of integrating IBM PCs by linking them to the Motorola Series 8000 range of UNIX-based multi-user systems.

PC Interconnect enables you to:

- Transfer files between your PC and the UNIX host
- Access the entire range of UNIX resident applications — your PC operates as a workstation on the UNIX host
- Interchange electronic mail with other users
- Print PC files remotely on the UNIX system
- Access a mainframe through communications software on the UNIX host

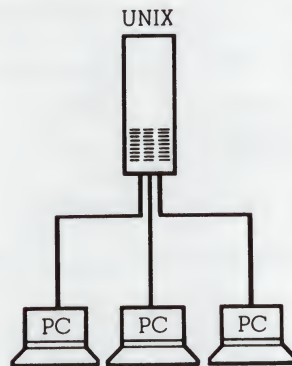
The Connection

PC Interconnect offers an easy and flexible way of connecting your PC to a UNIX host using a standard RS232 interface; it supports:

- direct (local) connections
- remote connections (via modems)
- Codex 4020 Entryway connections

Direct Connection

Using a direct line you can connect your PC to a locally situated Series 8000 UNIX host.



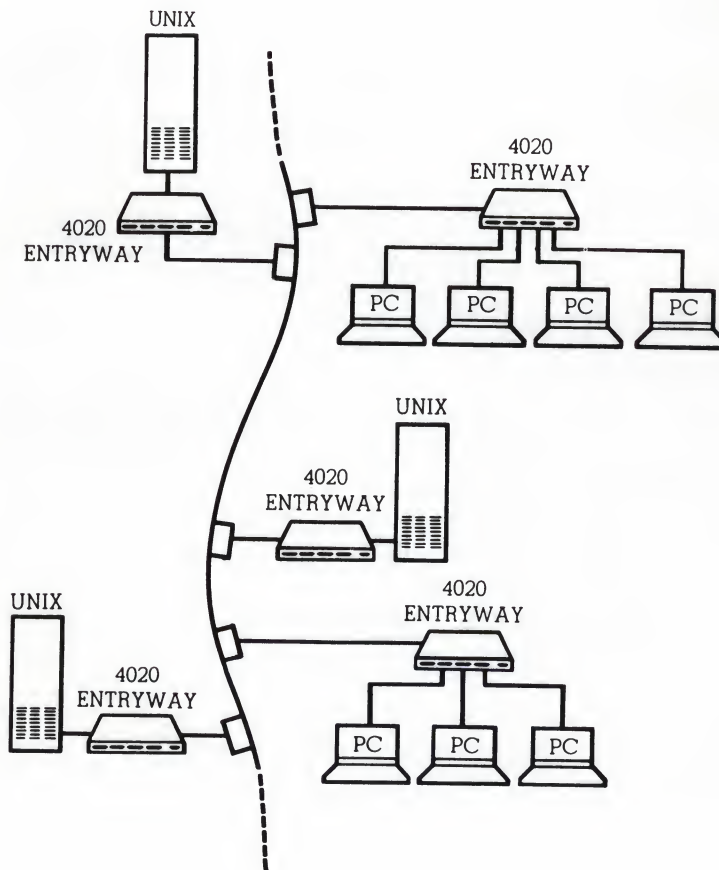
Remote Connection

PC Interconnect allows you to connect your PC (via modems and a telephone line) to a remote UNIX host. Full autodialling and automatic re-try capabilities are supported.



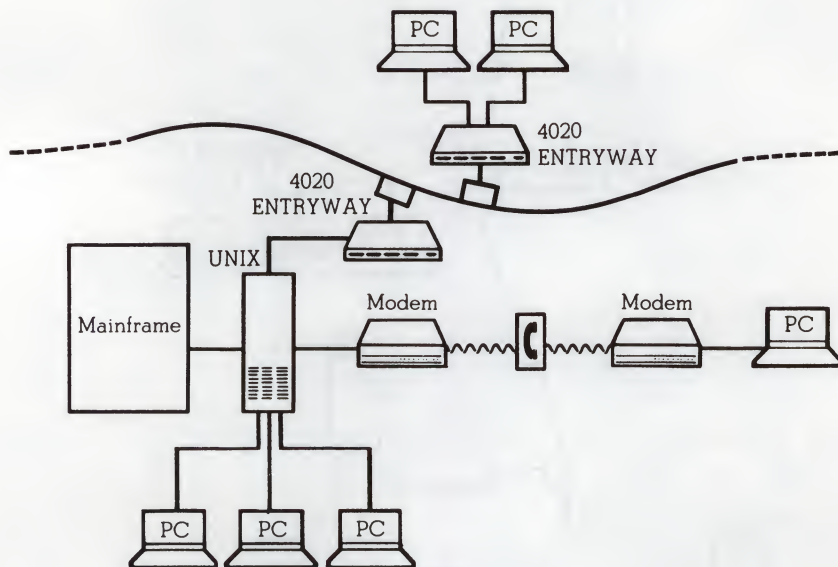
Codex 4020 Entryway Connection

PC Interconnect contains a built-in interface to the Codex 4020 Entryway. The Entryway gives you access to a LAN environment and, in this way, offers you the flexibility to switch between different Series 8000 systems and other network resources — such as SNA gateways — using a single physical connection.



PC Interconnect: the Total Picture

PC Interconnect allows you to group PCs around a Series 8000 system, which acts as a departmental cluster controller. The Series 8000 operates as a repository for shared data and you may interchange files with it or with other PCs. The Series 8000 can also act as a central focus for PC users who wish to access mainframe systems — the PCs operate as workstations on the mainframe.



Using PC Interconnect

PC Interconnect has an easy to use menu-driven user interface. In other words you can choose the operations you wish to perform by selecting options from each of the system menus.

The first menu you meet is called the System Options Menu and some of the options on this menu have their own subsidiary menus.

PC Interconnect also offers you a Soft Key Programming capability. This allows you to write short programs to pre-define a series of keystrokes associated with a complex operation. For example, you could connect to a remote host and run an application software package with just one keystroke.

System Startup

- 1 Insert the **PC Interconnect** diskette into the currently active PC drive.
- 2 Change to the pci directory by typing:
`cd \pci`
- 3 Start up **PC Interconnect** by typing:
`pci`

The system then displays a banner menu with the prompt:

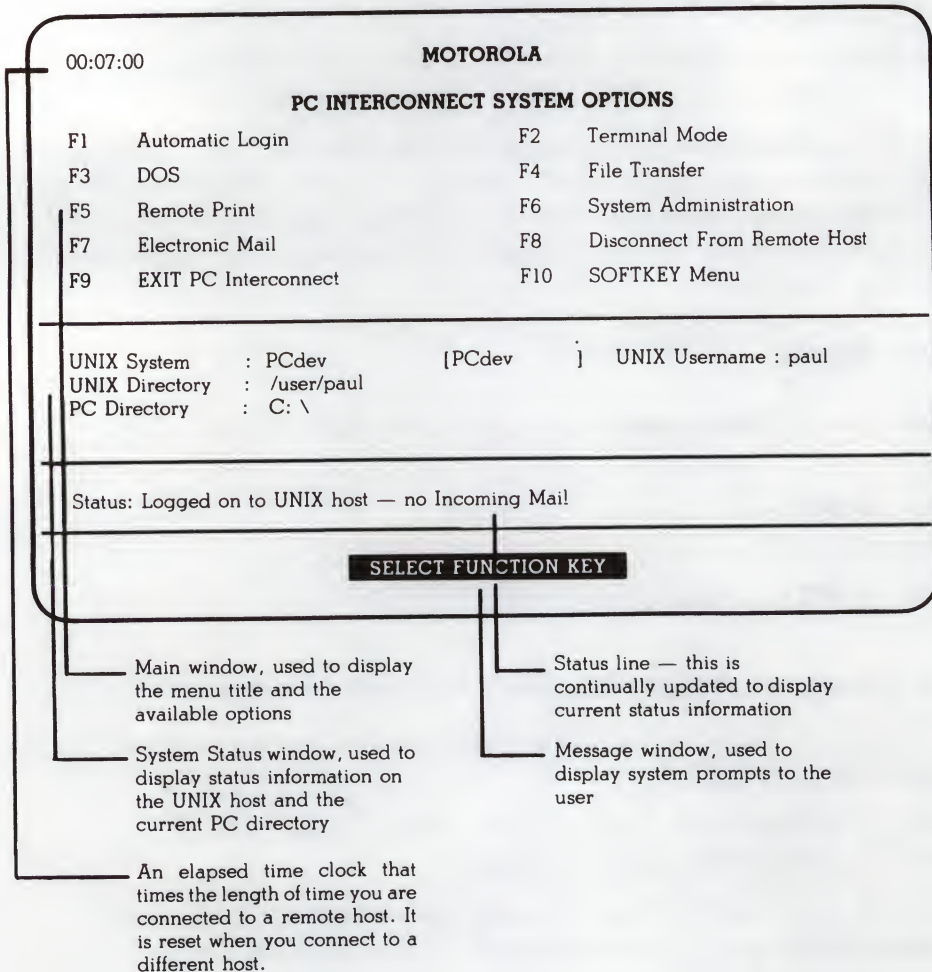
Do you want to go to the Softkeys Menu or the System Options (Main) Menu (S/M)?

Enter M to display the System Options Menu (Main Menu);
Enter S to display the Softkeys Menu.

Alternatively you may enter `pci-m` to go directly to the System Options Menu or `pci-s` to go directly to the Softkeys Menu.

The Format of PC Interconnect Menus

Each **PC Interconnect** menu is divided into four regions on the PC screen:



The Manual

This manual is divided into 7 sections.

Section 1, System Options, describes each of the options available in the System Options Menu (except System Administration), and also the options available in subsidiary menus.

Section 2, Soft Key Programming, describes how to set up and execute Soft Key Programming scripts (SKPs).

Section 3, Terminal Emulation, describes the TM220 terminal emulation facility of **PC Interconnect**.

Section 4, System Administration, describes how to set up the communications and system parameters which control the link between the PC and the UNIX host.

Section 5, System Installation, describes how to install **PC Interconnect** on the PC and on the UNIX machine.

Section 6, Technical Reference, is directed primarily at the system administrator; it contains technical data on the types of connections that the system supports: direct cables, modems and entryways.

Section 7 contains various appendices.

NOTE

Throughout this manual, the PC key  is referred to as RETURN.

System Options Introduction

The System Options Menu is the first menu you meet if you use the **PC Interconnect** menu system.

MOTOROLA			
PC INTERCONNECT SYSTEM OPTIONS			
F1	Automatic Login	F2	Terminal Mode
F3	DOS	F4	File Transfer
F5	Remote Print	F6	System Administration
F7	Electronic Mail	F8	Disconnect From Remote Host
F9	EXIT PC Interconnect	F10	SOFTKEY Menu

UNIX System	:	PCdev	[PCdev	]	UNIX Username:	paul
UNIX Directory	:	/user/paul				
PC Directory	:	C: \				

Status: Logged on to UNIX host — no Incoming Mail

SELECT FUNCTION KEY

The PC and the UNIX host are said to be connected when data transmitted by one may be received by the other. Logging in, however, involves identifying yourself to the UNIX host and (usually) entering a password. You must be both *connected* and *logged in* to the UNIX host to use all the facilities of **PC Interconnect**.

The rest of this section describes all the options available to you in the System Options Menu with the exception of System Administration (F6) — this is separately described in Section 4.

1 System Options

Automatic Login

Function: Automatic Login
Menu: System Options
Function key: F1
SKP word: LOGIN

The Automatic Login facility automatically connects you and logs you into the UNIX host with a username you have previously specified in the System Configuration Menu — see Section 4.

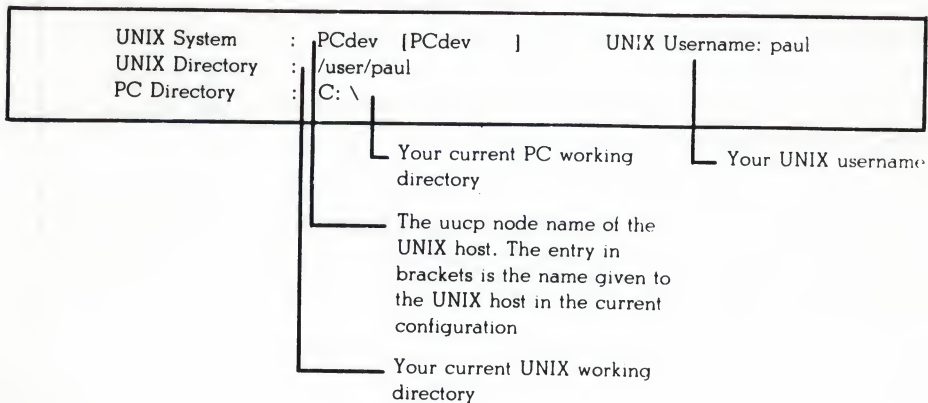
Select F1 on the System Options Menu. If you are required to enter a UNIX password, you are offered the prompt:

Enter UNIX Password:

Note that your password does not appear on the screen as you type it.

The Status Line then displays various messages monitoring the login sequence.

Once you are successfully logged in, the System Status window looks like this:



Types of Connection

PC Interconnect supports the following types of connection between the PC and the UNIX host:

- Direct Line
- Dial-up Line
- Leased Line
- Codex 4020 Entryway

In order to use any one of these connections, you must first set up the System Configuration and Communications Setup Menus in the appropriate manner — see Section 4, System Administration.

Direct Line

For a Direct Line connection, the PC and the UNIX host are physically connected via an RS232 cable.

Dial-up Line

The PC and the UNIX host are connected with modems and a dial-up telephone line. Both manual and autodial modems are supported.

If you are using a manual modem, the system prompts you with the telephone number to dial (as entered in the System Configuration Menu) and waits until it detects that you have successfully connected or until you have entered Ctrl/Break to stop the connection attempt.

If you are using an autodial modem, the system automatically dials the number for you. If a timeout occurs before the connection is made, you are offered the option to re-try at intervals that you are requested to specify.

Leased Line

The PC and the UNIX host are permanently connected via modems and a specially reserved telephone line.

No dialling is necessary if you are using a leased line. The system interprets the modem signals and explains any problems that might arise with the connection.

Codex 4020 Entryway

To make a connection via a Codex Entryway, the PC sends a node address (as specified in the System Configuration Menu) via the Entryway to the UNIX host. The system waits for the network to indicate that the connection is successful and explains any problems that might arise.

2 System Options

Terminal Mode

Function:	Terminal Mode
Menu:	System Options
Function key	F2

Select F2 from the System Options Menu to enable your PC to operate as a terminal connected to the UNIX host.

In order to use this option, you must first have established in the System Administration Menu which kind of terminal you wish the PC to emulate, a VT100 or a TM220. (See Section 4, System Administration.)

VT100 Emulation

Once you have selected F2 from the System Options Menu, the screen clears to emulate a VT100 screen. The bottom line is displayed in reverse video and serves as a status line.

*The four VT100 LEDs are shown in the status line: the character 0 is used to denote a LED that is OFF; * is used to denote a LED that is ON.*

*Press Alt/h to display a map of the VT100 keyboard as it is emulated in **PC Interconnect**.*

Press F10 or Alt/F10 at any stage to return to the System Options Menu.

TM220 Emulation

Once you have selected F2 from the System Options Menu, the screen clears to emulate a TM220 screen.

Press Alt/F10 at any stage to return to the System Options Menu.

See Section 3, TM220 Emulator, for a full description of how to use your PC as a TM220 terminal.

3 System Options

DOS

Function:	DOS
Menu	System Options
Function key:	F3
SKP key word:	DOS

The DOS option allows you to return to the PC environment while still retaining the RS232 link to the UNIX host.

Select F3 on the System Options Menu. The system clears the main window and displays a message telling you how much memory is available in the PC for the execution of local applications programs.

To return to the **PC Interconnect** System Options Menu, enter exit at the DOS prompt.

Any data sent to you by the UNIX host while you are operating in the PC environment is retained by **PC Interconnect** (up to approximately one screenful), and you can now view this data by pressing F2 to select Terminal Mode.

4 System Options

File Transfer

Function: File Transfer
Menu: System Options
Function key: F4
SKP key word: TRANSFER

The File Transfer option allows you to transfer files and directories between the UNIX host and the PC.

Select F4 on the System Options Menu.

You must first be correctly logged in to the UNIX host before you can use this option.

The system responds by activating the UNIX file server and then displays the File Transfer Menu:

MOTOROLA			
PC INTERCONNECT File Transfer Options			
F1	SEND PC File to UNIX	F2	BRING UNIX File to PC
F3	BACKUP Directory	F4	RESTORE Directory
F5	LIST PC Files	F6	LIST UNIX Files
F7	CHANGE PC Directory	F8	CHANGE UNIX Directory
F10 RETURN to Main Menu			
UNIX System: PCdev [S8000] UNIX Username: pc			
UNIX Directory: /user/pc			
PC Directory: C:\pci\edit			
Status: Ready for File Transfer ...			
SELECT FUNCTION KEY			

File Transfer

SEND PC File to UNIX

Function:	SEND PC file to UNIX
Menu:	File Transfer
Function key:	F1
SKP key word:	SEND

The PC to UNIX File Transfer option allows you to transfer files from the PC to the UNIX host.

Select F1 from the File Transfer Menu. The system now asks you to enter the PC filename (source) and the UNIX filename (destination).

If both filenames are the same, simply press RETURN when prompted for the UNIX filename.

*You may use the wildcard characters * and ? to select a number of files for transfer. For example, if you specify the filename ab*, then all files beginning with the string ab are selected. Similarly, if you specify the filename ab? then all files with 3-character names beginning with ab are selected.*

*Wildcard characters may be used at any position in the file pattern — e.g. a*b, *ab etc.*

*To transfer all the files in a directory, use the file pattern *.*.*

If you use a wildcard pattern to specify the source PC filenames, then you must specify a UNIX directory as the destination.

You are now asked to specify whether the file contains *program* or *text*; the default is *text*. See Appendix D for details of how the PC and UNIX host each deal with CRLF (Carriage Return/ Line Feed) sequences.

Commonly, object or executable files are designated *program* and ASCII text files are *text*.

If the UNIX host already contains a file with the specified name, you are offered the option to overwrite it.

UNIX File "*filename*" exists. Overwrite <Y/N> ?

Answer Y to start the transfer.

Note that the transfer cannot proceed if your UNIX username does not have valid access permission for the specified UNIX file.

The progress of each transfer is shown by a moving bar and byte count indicator:

Status: Transfer Progress << — >> Byte Count 1248

Once the transfer has been completed, the system displays:

Status: Ready for File Transfer

File Transfer Complete

SELECT FUNCTION KEY

NOTE

When executing a directory transfer, the question "Overwrite Existing Files?" is always asked, even if the destination directory is empty and there are no files to be overwritten.

Answer Y to start the transfer; answering N terminates the transfer.

File Transfer

BRING UNIX File to PC

Function:	BRING UNIX File to PC
Menu:	File Transfer
Function key:	F2
SKP key word:	BRING

Select F2 from the File Transfer menu to transfer files from the UNIX host to the PC.

The procedures for this option are the same as those for the last option (SEND PC File to UNIX), except that the transfer takes place in the opposite direction.

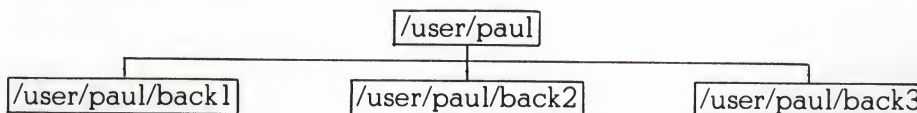
File Transfer

BACKUP Directory

Function: BACKUP Directory
Menu: File Transfer
Function Key: F3
SKP key word: BACKUP

The BACKUP Directory option allows you to save an entire PC directory (or selected files) to a backup directory on the UNIX system. It keeps multiple copies of the directory (files) by maintaining a backup structure of up to 12 sub-directories — back1 to back12 — on a UNIX parent directory.

The diagram illustrates a UNIX parent directory /user/paul with a backup structure of 3 sub-directories.



The BACKUP option can be used to backup to the subdirectories in cyclical order and so allows you to keep track of the latest versions of your files. It is most useful when you want to make regular backups of certain files.

Select F3 from the File Transfer menu. The system now asks you to enter the names of the PC files you wish to transfer.

Enter PC filename(s):

Your response to this prompt must be in the format pathname/file (to transfer a single file), pathname/file pattern (to transfer multiple files) or simply pathname (to transfer an entire directory).

pathname identifies the directory you wish to transfer from.

file or file pattern identifies the file(s) you wish to transfer from that directory.

If you wish to transfer the entire current directory, simply press RETURN.

Once you have specified the PC files (source) you wish to transfer, you are prompted to enter the name of the UNIX parent directory (destination) — for example, /user/paul.

Enter UNIX Directory:

The system response depends on whether or not the specified parent has a backup structure.

Parent Without an Existing Backup Structure

If you respond to the prompt Enter UNIX Directory with a parent directory that does not have a backup structure, the system asks you to specify the number of subdirectories (maximum of 12) you require.

How many subdirectories?

The system responds by setting up the backup structure on the UNIX parent and by creating the backup directories — up to 12, depending on how many you have specified.

As this is the first time a backup has taken place on this parent, the files are backed up to the subdirectory /parent/back1

The progress of the entire backup is indicated by a file counter, and a moving bar and byte counter records the progress of each individual file.

Note that if you specify a parent directory that doesn't already exist, then both the parent and the backup structure are created.

Parent with an Existing Backup Structure

If you respond to the prompt Enter UNIX Directory with the name of a UNIX parent directory that does have a backup structure, the system then displays the dates on which each of the backup directories were last written to.

You are prompted to enter the number of the subdirectory you wish to backup to. For example, enter 4 if you wish to backup to /parent/back4

Status: BACKUP — Save files to UNIX Backup Directory

Enter Backup to overwrite (Default 3)

1: Nov 5	2: Nov 18	3: Nov 4	4: Nov 22	5:	6:
7:	8:	9:	10:	11:	12:

By pressing RETURN, you can systematically backup to the oldest backup directory (in this case 3) and in this way maintain the most up-to-date versions of your files. Or, if you wish to backup to a new directory, enter the number of the next unfilled directory — in this case 5.

The system then prompts you with:

Do You Wish to Delete all Files in UNIX Directory <Y/N>?

Answer Y if you wish to replace the current contents of the PC directory with the restored data; enter N if you wish to append the restored data to the UNIX directory.

The progress of the entire backup is monitored by a file counter, and progress for each file is monitored by a moving bar and byte counter.

File Transfer

RESTORE Directory

Function: RESTORE Directory
Menu: File Transfer
Function key: F4
SKP key word: RESTORE

The Restore Directory option allows you to restore a PC directory you have previously stored in a UNIX backup directory.

Select F4 from the File Transfer Menu. The procedures for this option are similar to those for the BACKUP Directory option.

You are prompted to enter, in turn, the UNIX parent directory and the PC directory. To select the current directory (UNIX or PC), simply press RETURN at the appropriate prompt.

The names of the current backup directories for the specified UNIX parent are displayed in the System Status window.

The system then requests you to specify which backup directory you wish to restore — press RETURN to select the most recent (default) backup directory.

Status: RESTORE files to PC directory

Enter Backup to restore (Default 4)

1: Nov 5	2: Nov 18	3: Nov 4	4: Nov 22	5:	6:
7:	8:	9:	10:	11:	12:

The system now prompts you with:

Do You Wish to Delete all Files in PC Directory <Y/N>?

Answer Y if you wish to clear the PC directory; enter N if you wish to append the restored data to the PC directory.

The progress of the RESTORE operation is monitored by a file counter, and progress for each file is monitored by a moving bar and byte counter. The system status prompts you when the transfer is completed.

Status: Transfer Progress <<  >> Byte Count 1234

File Transfer

LIST Files

Function:	Directory Listing
Menu:	File Transfer
Function key:	F5 (for LIST PC Files) F6 (for LIST UNIX Files)
SKP key word:	DIR (for LIST PC Files) LIST (for LIST UNIX Files)

The Directory Listing option allows you to list the contents of the current PC or UNIX directory.

Select F5 (to list PC files) or F6 (to list UNIX files) from the File Transfer Menu.

The system then displays the requested listing in the main window.

For listings that take up more than one screen, press RETURN each time the screen fills up.

Press RETURN at the end of the listing to restore the File Transfer Menu.

File Transfer

CHANGE Directory

Function:	Change Directory
Menu:	File Transfer
Function key:	F7 (for CHANGE PC Directory) F8 (for CHANGE UNIX Directory)
SKP key word:	CHANGE PC (for CHANGE PC Directory) CHANGE UNIX (for CHANGE UNIX Directory)

The Change Directory option allows you to change the current PC or UNIX directory.

Select F7 (to change the PC directory) or F8 (to change the UNIX directory) from the File Transfer Menu.

Enter the name of the new directory at the prompt

Enter PC directory: or Enter UNIX directory:

If it is not possible to change to the requested directory, the system prompts you to specify a different directory.

5 System Options

Remote Print

Function: Remote Print
Menu: System Options
Function key: F5
SKP key word: PRINT

The Remote Print option allows you to print a PC text remotely on the UNIX printer.

Select F5 on the System Options Menu.

You must first be correctly logged in to the UNIX host before you can use this option.

The system responds by activating the UNIX file server and then displays the Remote Print Menu:

MOTOROLA				
PC INTERCONNECT Remote Print Options				
F1	PRINT PC File		F2	FORMAT and PRINT PC File
F3	Line Numbering	[OFF]	F4	Copies [1]
F5	DISPLAY Queue	[cpr]	F6	CANCEL Print Job
F7	LIST PC Files		F8	SELECT Printer [cpr]
F10 RETURN to Main Menu				
UNIX System		: PCdev [S8000]	UNIX Username: pc	
UNIX Directory		: /user/pc		
PC Directory		: C:\pci\edit		
Status: Ready for Remote Print . . .				
SELECT FUNCTION KEY				

Remote Print

F1 and F2 (PRINT PC File and FORMAT and PRINT PC File) are the function keys that initiate printing. If you wish to use other options, such as Copies, Line Numbering or SELECT Printer, then you should set them before pressing F1 or F2.

Remote Print

PRINT PC File

Function:	PRINT PC File
Menu:	Remote Print
Function key:	F1
SKP key word:	PRINT

The PRINT PC File option (F1) is the most basic of the Remote Print options.

Select F1 from the Remote Print menu and, when requested, enter the name of the PC file to be printed. The selected PC file is then transferred to the UNIX host and the UNIX print utility `lp` is invoked.

Printer status information is displayed in the Message window.

This option is suitable for files that have already been formatted on the PC — for example, print files that have been produced using a Word Processor.

Remote Print

FORMAT and PRINT PC File

Function:	FORMAT and PRINT PC File
Menu:	Remote Print
Function key:	F2
SKP key word:	FORMAT

The FORMAT and PRINT PC File option enables you to print unformatted PC files with headers and line numbers.

Select F2 from the Remote Print Menu and, when requested, enter the name of the PC file to be printed. The PC file is then transferred to the UNIX host, directed through the UNIC pr utility and then spooled onto the UNIX lp utility.

Printer status information is displayed in the Message Window.

Remote Print

Line Numbering

Function:	Line Numbering
Menu:	Remote Print
Function Key:	F3
SKP key word:	LINE NUMBER

This option allows you to decide whether or not you want line numbering in the output from the FORMAT and PRINT PC File option.

The current setting (ON or OFF) is displayed on the Remote Print Menu. If you wish to change the setting, select F3 and enter ON or OFF, as appropriate.

Remote Print

Copies

Function:	Copies
Menu:	Remote Print
Function key:	F4
SKP key word:	COPIES

The Copies option allows you to decide how many copies of a file you want to print.

Press F4 on the Remote Print Menu and select the new setting from the list (1-9) displayed in the message window.

If you wish to use this option, remember that you must select it before you select F1 or F2 to print.

Remote Print
DISPLAY Queue

Function: DISPLAY Queue
Menu: Remote Print
Function key: F5
SKP key word: DISPLAY QUEUE

Select F5 from the Remote Print Menu to display information on your print queue for the currently selected printer.

Remote Print

CANCEL Print Job

Function:	CANCEL Print Job
Menu:	Remote Print
Function key:	F6
SKP key word:	CANCEL

This option allows you to cancel a print job you have started.

Select F6 from the Remote Print Menu. The Main Window then displays a list of your Print Job IDs. When prompted, enter the ID of the print job you wish to cancel.

Remote Print

LIST PC Files

Function:	LIST PC Files
Menu:	Remote Print
Function key:	F7
SKP key word:	LIST

Select F7 to display a list of all the PC files in the current PC directory.

For listings that take up more than one screen, press RETURN to display subsequent screens.

Remote Print

SELECT Printer

Function:	SELECT Printer
Menu:	Remote Print
Function key:	F8
SKP key word:	SELECT

This option allows you to select one of the two printers defined in the System Configuration menu — see Section 4, System Administration.

Select F8 from the Remote Print menu and enter 1 or 2 as appropriate.

The default printer on the UNIX host is used if no printer has been defined.

6 System Options

Electronic Mail

Function: Electronic Mail
Menu: System Options
Function key: F7

The **PC Interconnect** Electronic Mail facility enables you to send and receive mail messages, and so communicate with other UNIX users.

Select F7 from the System Options Menu.

The system responds by activating the UNIX file server and then displays the Electronic Mail Menu:

MOTOROLA	
PC INTERCONNECT Electronic Mail Options	
F1	EDIT Mail Message
F2	ERASE Message
F3	SEND Message
F4	SEND Mail from PC File
F5	PRINT Message
F6	SAVE Message in PC File
F7	LIST UNIX Users
F8	VIEW Received Mail
F10 RETURN to Main Menu	
<hr/>	
UNIX System	: PCdev [S8000]
UNIX Directory	: /user/pc
PC Directory	: C:\pci\edit
UNIX Username: pc	
<hr/>	
Status: Logged on to UNIX host — Mail Received	
<hr/>	
Message in use	
<div>SELECT FUNCTION KEY</div>	

If you have no incoming mail, the Status line displays the message:

Status: Logged on to UNIX host — no Incoming Mail.

You must be correctly logged into the UNIX host to use all the Electronic Mail options. If you are not correctly logged in, the only functions you can use are EDIT Mail Message, ERASE Message and SAVE Message in PC file.

Electronic Mail

EDIT Mail Message

Function:	EDIT Mail Message
Menu:	Electronic Mail
Function key:	F1

The EDIT option allows you to create and edit a short mail message (up to about 50 lines) in a PC file called the Message file. Once you have finished editing your message you may save it in a file of your choice.

For longer messages you are recommended to use another editing or word processing package, and then use F4 (SEND Mail from PC File) to input the text into the mail system.

Select F1 from the Electronic Mail Menu. The system responds by replacing the main window with the first 11 lines of the Message file. Use the **PC Interconnect** Edit functions (described below) to edit your message.

Note that text wraps from line to line and you need only press RETURN when you come to the end of a paragraph.

PC Interconnect Edit Functions

Cursor control	Use the PC cursor control keys to move the cursor around the main window. Once you reach the top (or bottom) of the window, the text is scrolled until you reach the top (or bottom) of the file.
----------------	---

Insert/Overtyping Modes	Use the PC Ins key to enter Insert mode — this displaces text to the right as you type; press the Ins key to return to Overtyping mode — this overwrites text as you type.
-------------------------	--

Delete	Position the cursor over the character you wish to delete and press the Del key.
Update and Exit	Press F10 to update the Message file and exit to the Electronic Mail Menu.
Exit, No Update	Press Alt/F10 to exit to the Electronic Mail Menu without updating the Message file.

Once you have edited a message you may select the SEND Message option (F2) to send the message to another UNIX user, or you may select the SAVE Message in PC File option (F6) to save it in a PC file.

Electronic Mail

ERASE Message

Function: ERASE Message
Menu: Electronic Mail
Function key: F2

Select F2 from the Electronic Mail menu to erase the Message file.

It is a good idea to erase the Message file before you write a new message.

If you have not yet sent the message to another UNIX user, you are asked to confirm that you wish to erase it.

Message NOT Sent — Erase <Y/N>?

Electronic Mail

SEND Message

Function: SEND Message
Menu: Electronic Mail
Function key: F3

This option allows you to send a message you have prepared using the EDIT Mail option to users on the UNIX host.

Select F3 from the Electronic Mail Menu and enter the username of the person you wish to send the message to.

If you wish to send the message to more than one user, leave a blank space between each username.

A moving bar and byte counter monitor the progress of the message transfer.

Electronic Mail

SEND Mail from PC File

Function: SEND Mail from PC File
Menu: Electronic Mail
Function key: F4

This option allows you to send a PC file as a mail message to users on the UNIX host.

Select F4 from the Electronic Mail Menu and enter the PC filename when prompted. Then enter the username of the person you wish to send the message to.

If you wish to send the message to more than one user, leave a blank space between each username.

A moving bar and byte counter monitor the progress of the message transfer.

Electronic Mail

PRINT Message

Function:	PRINT Message
Menu:	Electronic Mail
Function key:	F5

Select F5 on the Electronic Mail Menu to print the current contents of the Message file. The system then prompts you with:

PC Printer or UNIX Printer?

Enter PC to print locally; enter UNIX to print on the default UNIX printer.

Electronic Mail

SAVE Message in PC File

Function: SAVE Message in PC File
Menu: Electronic Mail
Function key: F6

Select F6 from the Electronic Mail menu to save the current contents of the Message file in a PC file.

When prompted, enter the name of the PC file. If the file already exists, you are asked:

PC File "*Filename*" exists. Overwrite <Y/N> ?

Electronic Mail
LIST UNIX Users

Function:	LIST UNIX Users
Menu:	Electronic Mail
Function key:	F7

Select F7 from the Electronic Mail Menu to obtain a list of all valid UNIX usernames.

Electronic Mail

VIEW Received Mail

Function: VIEW Received Mail
Menu: Electronic Mail
Function key: F8

Select F8 from the Electronic Mail menu to view incoming mail. Your mail is then transferred to the PC and a moving bar and byte count indicator monitor the progress of the transfer.

Once the transfer is complete, the Received Mail menu is displayed.

Number	From	Date
→ 1	accounts	Fri Jan 17 17:34 PST 1986
2	sales	Fri Jan 17 15:07 PST 1986
3	accounts	Fri Jan 17 11:21 PST 1986
No more messages		
F1	VIEW Message	F2 DELETE Message
F3	PRINT Message	F4 FORWARD Message
F5	SAVE Message	F10 RETURN to Mail Menu
Status: Current Message is 1		
SELECT FUNCTION KEY		

The Main Window displays the Received Mail summary: this contains information on each incoming message: a reference number, the sender and the date and time it was sent.

The System Status window displays the Received Mail options and the function keys you may use to invoke them.

Note that you must be correctly logged into the UNIX host to view your mail.

Received Mail

VIEW Message

Function:	VIEW Message
Menu:	Received Mail
Function key:	F1

To view a message select F1 and enter the number of the message you wish to view.

Received Mail

DELETE Message

Function: DELETE Message
Menu: Received Mail
Function key: F2

To delete a received message, select F2 and enter the number of the message you wish to delete.

Once you have selected the message to be deleted, it is marked with an asterisk (*) in the Received Mail summary and you may no longer access it.

*2 sales Fri Jan 17 15:07 PST 1986
When you return to the Electronic Mail Menu, you are requested to confirm any deletions you have made.

Confirm deletions <Y/N>?
If you respond N, no deletions are made.

Received Mail

PRINT Message

Function:	PRINT Message
Menu:	Received Mail
Function key:	F3

To print a received message, select F3 and enter the number of the message you wish to print.

When prompted, specify the PC printer or the UNIX printer.

Received Mail

FORWARD Message

Function:	FORWARD Message
Menu:	Received Mail
Function key:	F4

To forward a received message to another UNIX user, select F4 and enter the number of the message you wish to forward.

When prompted, enter the usernames you wish to send the message to, each separated by a space.

Received Mail

SAVE Message

Function:	SAVE Message
Menu:	Received Mail
Function key:	F5

To save a received message in a PC file, select F5 and enter the number of the message you wish to save.

When prompted, enter the name of the PC file you wish to save the message in. If the PC file already exists you are offered the option to overwrite it or to terminate the operation.

7 System Options

Disconnect from Remote Host

Function:	Disconnect from Remote Host
Menu:	System Options
Function key:	F8
SKP keyword:	DISCONNECT

Select F8 from the System Options Menu to disconnect from a remote host.

8 System Options

EXIT PC

Interconnect

Function: EXIT PC Interconnect
Menu: System Options
Function key: F9

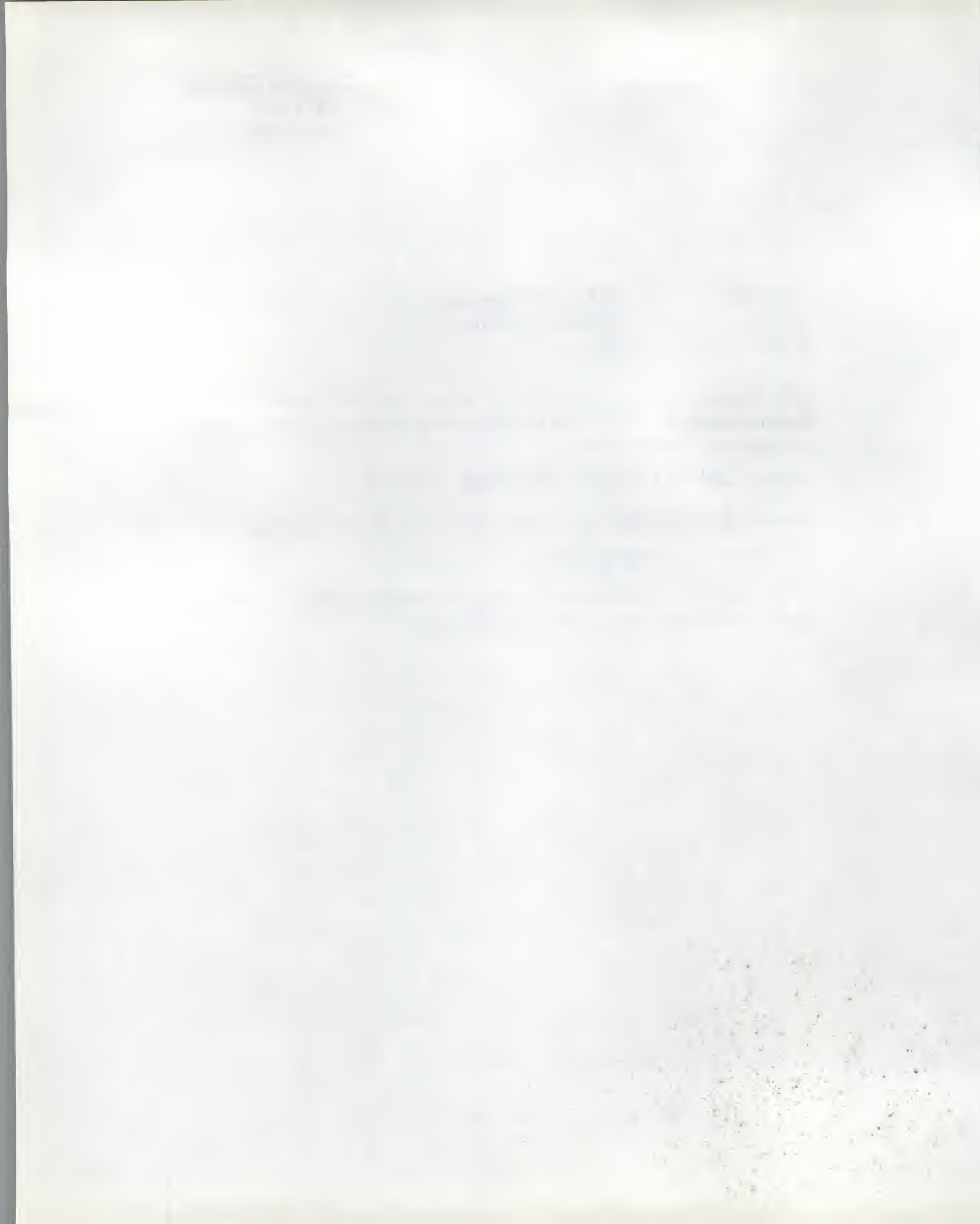
The session termination function allows you to logout from **PC Interconnect**. Select F9 from the System Options Menu; the system then prompts you with:

Do you wish to LOGOUT from UNIX <Y/N>?

Answer Y to log out. The system responds with the message:

PC Interconnect Terminated

Note that it is not possible to logout successfully while a UNIX host application has control of the RS232 line.



9 System Options

SOFTKEY Menu

Function: SOFTKEY Menu
Menu: System Options
Function key: F10

Select F10 from the System Options Menu to access the **PC Interconnect** Softkey Menu — see Section 2.

The **PC Interconnect** menu system (as described in Section 1) operates in a conversational mode: the system asks you questions (in the form of prompts), and you respond by pressing a function key or by typing a reply.

In addition to the menu system, however, **PC Interconnect** also offers a more direct method of performing the functions listed in the menus: this is known as the Soft Key Programming method. This allows you to write short programs (called SKPs) that predefine the sequences of keystrokes necessary to perform a **PC Interconnect** operation.

The Softkeys Menu

The Softkeys Menu is displayed once you access the Soft Key Programming module of **PC Interconnect**. Each of the entries listed in the main window of the example below consists of a tagkey (a letter) followed by the title of an SKP. To execute an SKP, press the appropriate tagkey — in the example below, press C to connect the S8000.

The options listed in the System Status window allow you to create, edit and manage your SKPs.

Example: Softkey Menu

MOTOROLA			
PC INTERCONNECT SOFTKEYS MENU			
C:	Connect to S8000	L:	List PC Directory
F:	Network File Server	E:	Connect to Network Entryway
B:	Business Assistant	P:	Network Print Services
D:	DOS Mode	S:	Summary of Available Options
X:	Disconnect from Remote Source		

F1	EDIT Key Sequence	F2	DELETE Key Sequence	F3	COPY Key Sequence
F4	MOVE Key Sequence	F9	EXIT PC Interconnect	F10	Main Menu

PAGE UP, PAGE DOWN For More

Status : Logged on to UNIX host — Incoming mail

SELECT FUNCTION KEY OR SOFTKEY

Chapter 1 of this section describes the structure of an SKP; chapter 2 describes the Softkey Options (as listed in the System Status window of the Softkeys Menu); and chapters 3 to 10 describe how to compose SKPs for each **PC Interconnect** function.

In the synopsis for each function, literals are in roman type; non-literals are in italics; and optional items are enclosed in square brackets.

1 Softkeys

The Structure of an SKP

The example that follows describes the structure of a typical SKP; its function is to select configuration 8 as the current configuration.

"CONFIG 8"	the title
ADMIN	enter the administration menu
SELECT "8"	select configuration 8
RETURN	return to System Options menu
DONE	the end of the SKP

Each SKP consists of a title and a series of statements or comments ending with the word DONE. A statement may be either a keyword or a string — but note that an SKP must contain at least one keyword.

Statements may be separated by a space, a tab, a carriage return (or by any combination of these), but it is a good idea to enter each one on a separate line and to use indentation to improve legibility.

Title

The title of the SKP is what appears in the Softkeys Menu; it must be the first item in the SKP and it must be enclosed in double inverted commas.

If you wish to include inverted commas in an SKP title, then you should precede them with a backslash (\). Similarly, if you wish to use a backslash, then you must use two of them. An SKP title may be up to 32 characters long.

<i>As typed</i>	<i>As displayed on Softkeys Menu</i>
"Fred's PC"	Fred's PC
"Funny \"\$%* title"	Funny "\$%* title
"Backup \\lib"	Backup \lib

Keywords

The most important words in a SKP are the keywords which describe the action of keystrokes within the **PC Interconnect** environment. There are three kinds of keywords:

- Those that represent the selection of menu options in **PC Interconnect** — see ADMIN and SELECT in the example above. See chapters 3 to 10 of this section for detailed descriptions of these.
- Those that represent keystrokes explicitly — for example:

TAB issues the TAB key
CR issues a Carriage Return
ALT F10 issues Alt/F10

Appendix A contains a full list of such keywords.

- The special keywords PAUSE, NOCR and RETURN

PAUSE followed by a keyname stops the execution of the SKP until the specified key is pressed; it is most useful in allowing the user to input a string — typically a password, a filename or a UNIX command.

PAUSE CR pauses until the user presses CR
PAUSE ALT F10 pauses until the user presses ALT/F10

Appended to a string, NOCR suppresses the issue of a Carriage Return (CR) after the string — see below, under Strings.

RETURN issues the keystroke necessary to bring the user back from a subsidiary to a main menu or from there to the System Options Menu. It is not necessary after functions that do not have subsidiary menus: LOGIN, DOS and DISCONNECT.

Keywords may be in upper or lower case (ADMIN or admin) but not in a mixture of both (Admin).

Strings

Strings differ from keywords in that, when invoked, they issue a sequence of keyboard characters rather than a function key. When you include strings in an SKP you must enclose them in double inverted commas to distinguish them from keywords.

The rules that apply to inverted commas within an SKP title also apply to strings — see above, under Title.

Strings always issue a Carriage Return after themselves — in other words, the string "ls" has the same effect as ls followed by a CR. You may suppress the CR by appending the keyword NOCR to the string.

"fred" issues the letters f,r,e,d followed by CR

"fred" NOCR issues the letters f,r,e,d

Comments

If you wish, you may insert comments into an SKP — these could be notes or descriptions of the functions of each keyword. Precede comments with a sharp character (#); the next CR defines the end of the comments.

LOGIN # select the menu item Automatic Login

PAUSE CR # await Carriage Return from the user

2 Softkeys

The Softkey Options

Once you choose to use the Soft Key Programming module of **PC Interconnect**, you are presented with the Softkeys Menu.

MOTOROLA
PC INTERCONNECT SOFTKEYS MENU

C: Connect to S8000
F: Network File Server
B: Business Assistant
D: DOS Mode
X: Disconnect from Remote Source

L: List PC Directory
E: Connect to Network Entryway
P: Network Print Services
S: Summary of Available Options

F1 EDIT Key Sequence
F4 MOVE Key Sequence

F2 DELETE Key Sequence
F9 EXIT PC Interconnect

F3 COPY Key Sequence
F10 Main Menu

PAGE UP, PAGE DOWN For More

Status: Logged on to UNIX host — no Incoming Mail

SELECT FUNCTION KEY OR SOFTKEY

tagkeys: SKP titles

SKP options — these allow you to create, edit and manage your SKPs

Press a function key to select one of the SKP options from the System Status window. Press the appropriate soft key (tagkey) to execute an SKP — for example, press D to choose DOS mode from this menu.

The Main Window displays only the first 10 SKPs: the PgUp and PgDn keys allow you to page through all of your SKPs.

Softkeys

EDIT Key Sequence

Function: EDIT Key Sequence
Menu: Softkeys
Function key: F1

Select F1 from the Softkeys Menu to create a new SKP or to edit an existing one. The system responds with the prompt:

Which Softkey do you wish to edit?

Any alphabetic key, upper or lower case may be used as a softkey.

If no SKP exists for the key you choose (e.g. A), the system responds:

Editing New Script for "A"

If a SKP does already exist for the key you choose (e.g. B), the system responds with the title of the SKP (e.g. Business Assistant).

Editing Script "B: Business Assistant"

*The **PC Interconnect** Edit functions are described in Section 1, chapter 6 — Electronic Mail.*

Press F10 when you have finished editing the SKP — the system then compiles the SKP.

Softkeys

DELETE Key Sequence

Function: DELETE Key Sequence
Menu: Softkeys Menu
Function key: F2

To delete an SKP, select F2 from the Softkeys Menu and enter the tagkey that identifies the SKP you wish to delete.

Softkeys

COPY Key Sequence

Function:	COPY Key Sequence
Menu:	Softkeys Menu
Function key:	F3

To copy an SKP, select F3 from the Softkeys Menu. When prompted, enter the tagkey for the SKP you wish to copy and then the tagkey for the destination SKP.

The tagkey for the destination SKP must be one that does not already have an SKP associated with it.

Softkeys

MOVE Key Sequence

Function:	MOVE Key Sequence
Menu:	Softkeys Menu
Function key:	F4

This option allows you to change the tagkey associated with an SKP.

Select F4 from the Softkeys Menu and enter in turn the old tagkey and the new tagkey.

Keyword

LOGIN

Synopsis

"title"

LOGIN

"password"

DONE

Description

LOGIN invokes the Automatic Login option from the System Options Menu and it requires one string for the UNIX password.

If the UNIX host does not require a password the string is ignored.

Example

"LOGIN: Perform Login sequence"

LOGIN # invoke Automatic Login

 PAUSE CR # allow user to enter password

DONE # finished

(This page intentionally left blank.)

Keyword

DOS

Synopsis

"title"

DOS

...

[PAUSE *keyname*]

[RETURN]

DONE

Description

DOS allows you to suspend the **PC Interconnect** session and return to the PC's own DOS environment, while still retaining the communications link to the UNIX host.

As with **TERMINAL**, DOS may be followed by any number of strings — typically DOS commands. To exit from DOS, enter **PAUSE** followed by a keyname — usually **ALT F10**.

Example

"DOS: return to PC environment"

DOS # enter DOS mode

 "dir" # directory listing

 "more < " NOCR # invoke 'more <' command

 PAUSE CR # specify a file

 PAUSE ALT F10 # wait for Alt F10

RETURN # return to SKP menu

DONE # finished

Keyword

TRANSFER

Synopsis

"title"

TRANSFER

. . .

[RETURN]

DONE

Description

TRANSFER allows you to access any one of the the File Transfer options within **PC Interconnect**. The sequence for a TRANSFER SKP is TRANSFER, followed (optionally) by one or more of the following

BRING	Transfers a UNIX file to the PC
SEND	Transfers a PC file to the UNIX host
BACKUP	Backs up a PC directory to the UNIX host
RESTORE	Restores a PC directory from a UNIX backup directory
CHDIR PC	Changes from the current to another PC directory
CHDIR UNIX	Changes from the current to another UNIX directory
DIR	Lists all files in the current PC directory
LIST	Lists all files in the current UNIX directory

File Transfer

SEND PC File to UNIX

Keyword

SEND

Synopsis

"title"

TRANSFER

SEND

"PC filename"

"UNIX filename"

"T" or "P"

"Y" or "N"

[RETURN]

DONE

Description

SEND requires 4 strings: the name of the PC filename you wish to transfer; the name of the destination UNIX filename; "T" or "P" to indicate whether the file is *text* or *program* (see Appendix D); and "Y" or "N" to indicate whether or not you wish to overwrite the UNIX file (if it already exists).

Example

"XFER: PC to UNIX file transfer"

TRANSFER	# enter File Transfer menu
SEND	# SEND file from PC to UNIX
"\\pci\\passwd"	# PC file '\\pci\\passwd'
CR	# SEND to current dir (default)
"T"	# TEXT File
"Y"	# overwrite if necessary
RETURN	# return to SKP menu
DONE	# finished

File Transfer

BRING UNIX File to PC

Keyword

BRING

Synopsis

```
"title"  
TRANSFER  
    BRING  
    "UNIX filename"  
    "PC filename"  
    "T" or "P"  
    "Y" or "N"  
[RETURN]  
DONE
```

Description

BRING requires 4 strings: the name of the UNIX filename you wish to transfer; the name of the destination PC filename; "T" or "P" to indicate whether the file is to be transferred as *text* or as *program* (see Appendix D); and "Y" or "N" to indicate whether or not you wish to overwrite the PC file (if it already exists).

Example

```
"XFER: UNIX to PC transfer"  
TRANSFER          # enter File Transfer menu  
    BRING          # BRING file from UNIX to PC  
    "/etc/passwd"  # UNIX file  
    CR             # BRING to current dir (default)  
    "T"            # TEXT File  
    "Y"            # overwrite if necessary  
RETURN            # return to SKP menu  
DONE              # finished
```

File Transfer

BACKUP Directory

Keyword

BACKUP

Synopsis

"title"
TRANSFER
 BACKUP
 "PC directory"
 "UNIX parent directory"
 "*n*"
 "Y" or "N"
[RETURN]
DONE

Description

BACKUP requires 4 strings: the name of the PC directory you wish to backup; the name of the destination UNIX parent directory; the number of the backup directory within the UNIX parent; and "Y" or "N" to indicate whether or not you wish to delete the existing files in the backup directory.

You may backup selected PC files by using the wildcard characters to identify a file pattern within a directory.

Example

```
"BACKUP directory"  
TRANSFER          # enter File Transfer menu  
  BACKUP           # BACKUP directory option  
  "\\paul\\*.c"     # PC files to back up  
  "/user/paul"     # UNIX dir to back them up to  
  "2"              # backup dir '2', i.e. /user/paul/back2  
  "N"              # do NOT delete all files in UNIX dir  
RETURN             # return to SKP menu  
DONE               # finished
```

File Transfer

RESTORE Directory

Keyword

RESTORE

Synopsis

"title"

TRANSFER

RESTORE

"UNIX Parent Directory"

"PC Directory"

"n"

"Y" or "N"

[RETURN]

DONE

Description

RESTORE requires 4 strings: the name of the UNIX Parent directory you wish to restore from; the name of the PC directory you wish to restore to; the number of the backup directory within the UNIX parent; and "Y" or "N" to indicate whether or not you wish to delete existing files in the PC directory.

You may restore selected UNIX files by using the wildcard characters to identify a file pattern within a directory.

Example

"XFER: Directory RESTORE"

TRANSFER	# enter File Transfer menu
RESTORE	# RESTORE directory option
"/user/paul"	# UNIX parent dir to RESTORE from
"\\paul"	# PC directory to RESTORE to
"2"	# RESTORE from UNIX backup dir '2'
"N"	# do NOT delete files in PC dir
RETURN	# return to SKP menu
DONE	# finished

File Transfer

LIST PC Files

Keyword

DIR

Synopsis

"title"

TRANSFER

DIR

[RETURN]

DONE

Description

DIR lists the contents of the current PC directory; it requires no additional strings or keywords. It is useful to include a PAUSE to allow the user to page through the directory listing.

Example

"XFER: List PC files"

TRANSFER

enter File Transfer menu

DIR

List PC Files option

PAUSE F10

wait until user presses F10

RETURN

return to SKP menu

DONE

finished

File Transfer

LIST UNIX Files

Keyword

LIST

Synopsis

"title"
TRANSFER
 LIST
[RETURN]
DONE

Description

LIST lists out the contents of the current UNIX directory; it requires no additional strings or keywords. It is useful to enter a PAUSE to allow the user to page through the directory listing.

Example

"XFER: List UNIX files"	
TRANSFER	# enter File Transfer menu
LIST	# List UNIX files option
PAUSE F10	# wait until user presses F10
RETURN	# return to SKP menu
DONE	# finished

File Transfer

CHANGE PC Directory

Keyword

CHDIR PC

Synopsis

```
"title"  
TRANSFER  
    CHDIR PC  
    "new PC directory"  
[RETURN]  
DONE
```

Description

CHDIR PC takes one string for the name of the new, current PC directory; alternatively, you may PAUSE to allow the user to enter the directory name.

Example

```
"XFER: Change PC directory"  
TRANSFER          # enter File Transfer menu  
    CHDIR PC       # Change PC Directory option . . .  
    "/pci/menus"   # to '/pci/menus'. Also \\pci\\menus  
RETURN            # return to SKP menu  
DONE              # finished
```

File Transfer

CHANGE UNIX Directory

Keyword

CHDIR UNIX

Synopsis

```
"title"  
TRANSFER  
    CHDIR UNIX  
    "new UNIX directory"  
[RETURN]  
DONE
```

Description

CHDIR UNIX takes one string for the name of the new, current UNIX directory; alternatively, you may PAUSE to allow the user to enter the directory name.

Example

```
"XFER: Change UNIX directory"  
TRANSFER          # enter File Transfer menu  
    CHDIR UNIX     # Change UNIX Directory option  
    PAUSE CR       # allow user to enter new dir  
RETURN            # return to SKP menu  
DONE              # finished
```

Keyword

PRINT

Synopsis

"title"

PRINT

keyword

[RETURN]

DONE

Description

PRINT allows you to access any one of the the Remote Print options within **PC Interconnect**. The sequence for a PRINT SKP is PRINT followed (optionally) by one or more of the following keywords:

SUBMIT	Prints a PC file
PAGE	Formats and prints a PC file
LINENUMBER	Includes line numbers in printed output
COPIES	Prints up to 9 copies of a file
DISPLAY QUEUE	Displays the print queue for a specified printer
CANCEL	Cancels a print job
LIST	Lists PC files in the current directory
SELECT PRINTER	Selects a specified printer

The sequence of Remote Print keywords is very important: for example, if you wish to print a number of copies of a file with line numbering then you must enter the COPIES and LINENUMBER keywords *before* SUBMIT or PAGE.

Remote Print

PRINT PC File

Keyword

SUBMIT

Synopsis

```
"title"  
PRINT  
    SUBMIT  
    "PC Filename"  
[RETURN]  
DONE
```

Description

SUBMIT spools the specified PC file directly to the currently selected printer. Typically you would use it in combination with other Remote Print keywords, such as LINENUMBER, COPIES and SELECT PRINTER.

Example

```
"PRINT: SUBMIT file"  
PRINT          # enter Remote Print menu  
    SUBMIT      # SUBMIT option  
    PAUSE CR    # user input: filename to print  
    CR          # use default printer  
RETURN         # return to SKP menu  
DONE           # finished
```

Remote Print

FORMAT and PRINT PC File

Keyword

PAGE

Synopsis

```
"title"  
PRINT  
    PAGE  
    "PC Filename"  
[RETURN]  
DONE
```

Description

PAGE directs the specified file through the UNIX utility 'pr', which enables the printed output to include headers and line numbers.

Example

```
"PRINT: PAGE file"  
PRINT                                # enter Remote Print menu  
    PAGE                            # PAGE option  
    "/paul/pf.adt"                  # user input: filename to print  
    CR                              # use default printer  
RETURN                              # return to SKP menu  
DONE                                # finished
```

Remote Print

Line Numbering

Keyword

LINENUMBER

Synopsis

"title"

PRINT

LINENUMBER

"ON" or "OFF"

[RETURN]

DONE

Description

LINENUMBER allows you to decide whether or not you want to include line numbers in the printed output.

Example

"PRINT: LINENUMBER option"

PRINT

enter Remote Print menu

LINENUMBER

LINENUMBER option

"ON"

or 'OFF'

PAGE

PAGE option

"/paul/pf.adt"

user input: filename to print

CR

use default printer

RETURN

return to SKP menu

DONE

finished

Remote Print

Copies

Keyword

COPIES

Synopsis

```
"title"  
PRINT  
    COPIES  
    "n"  
[RETURN]  
DONE
```

Description

COPIES allows you to specify "n" the number of copies (maximum of 9) of a file you want to print.

Example

```
"PRINT: COPIES option"  
PRINT # enter Remote Print menu  
    COPIES # COPIES option  
    "1" # user input: 1-9  
    LINENUMBER # LINENUMBER option  
    "ON" # or 'OFF'  
    PAGE # PAGE option  
    "/paul/pf.adt" # user input: filename to print  
    CR # use default printer  
RETURN # return to SKP menu  
DONE # finished
```

Remote Print

DISPLAY Queue

Keyword

DISPLAY QUEUE

Synopsis

```
"title"  
PRINT  
    DISPLAY QUEUE  
[RETURN]  
DONE
```

Description

DISPLAY QUEUE allows you to view the print queue for the currently selected printer. It is useful to PAUSE to allow the user to page through the print queue information.

Example

```
"PRINT: DISPLAY option"  
PRINT                                # enter Remote Print menu  
    COPIES                          # COPIES option  
    "1"                             # user input: 1-9  
    LINENUMBER                      # LINENUMBER option  
    "ON"                            # or 'OFF'  
    PAGE                           # PAGE option  
    "/paul/pf.adt"                  # user input: filename to print  
    CR                             # use default printer  
    DISPLAY QUEUE                   # DISPLAY option  
    PAUSE F10                       # wait for F10 key  
RETURN                              # return to SKP menu  
DONE                               # finished
```

Remote Print

CANCEL Print Job

Keyword

CANCEL

Synopsis

```
"title"  
PRINT  
    CANCEL  
    "Print Job ID"  
[RETURN]  
DONE
```

Description

CANCEL requires one string to specify the ID for the job you wish to cancel.

Example

```
"PRINT: CANCEL option"  
PRINT                # enter Remote Print menu  
    COPIES            # COPIES option  
    "1"               # user input: 1-9  
    LINENUMBER        # LINENUMBER option  
    "ON"              # or 'OFF'  
    PAGE              # PAGE option  
    "/paul/pf.adt"    # user input: filename to print  
    CR                # use default printer  
    CANCEL            # CANCEL option  
    CR                # issue CR key  
    PAUSE CR          # user input: printer-id to cancel  
RETURN               # return to SKP menu  
DONE                 # finished
```

Remote Print

LIST PC Files

Keyword

LIST

Synopsis

"title"

PRINT

LIST

[RETURN]

DONE

Description

LIST lists the contents of the current PC directory. It is useful to include a PAUSE to allow the user to page through the directory listing.

Example

"PRINT: LIST PC files option"

PRINT	# enter Remote Print menu
LIST	# LIST PC Files option
PAUSE ESC	# wait for ESC key
SUBMIT	# SUBMIT option
PAUSE CR	# user input: filename to print
CR	# use default printer
RETURN	# return to SKP menu
DONE	# finished

Remote Print

SELECT Printer

Keyword

SELECT

Synopsis

```
"title"  
PRINT  
    SELECT PRINTER  
    "1" or "2"  
[RETURN]  
DONE
```

Description

SELECT PRINTER allows you to select one of the printers defined in the System Configuration Menu.

Example

```
"PRINT: SELECT Printer option"  
PRINT                                # enter Remote Print menu  
    SELECT PRINTER                  # SELECT PRINTER option  
    PAUSE CR                        # user input: 1 or 2  
    PAGE                            # PAGE option  
    "/paul/pf.adt"                  # user input: filename to print  
    CR                              # use default printer  
RETURN                              # return to SKP menu  
DONE                                # finished
```

Keyword

ADMIN and SELECT

Synopsis

"title"
ADMIN
 SELECT "n"
[RETURN]
DONE

Description

The SKP outlined in the Synopsis is the only one possible for System Administration. It enables you to select a configuration from among those you have previously set up.

Example

"ADMIN: selection config 2"
ADMIN # enter System Administration Menu
 SELECT "2" # select configuration 2
RETURN # return to SKP menu
DONE # finished

9 Softkeys

Disconnect from Remote Host

Keyword

DISCONNECT

Synopsis

"title"

...

DISCONNECT

DONE

Description

DISCONNECT allows you to disconnect from a remote host; it does not require any additional strings.

Example

"Disconnect from Remote Host"

LOGIN	# invoke Automatic Login
PAUSE CR	# allow user to enter password
TERMINAL	# enter Terminal Mode
PAUSE ALT F10	# wait for Alt F10
DISCONNECT	# DISCONNECT option
DONE	# finished

10 Softkeys

Examples

Example 1

```
"Print all my SKPs"
LOGIN
    PAUSE CR
PRINT
    PAGE
    "/pci/pciskp/pciskp.*"
    CR
    DISPLAY QUEUE
    PAUSE CR
RETURN
DONE
```

```
# user must enter his password
# assume we're already logged on
# do a formatted print
# all my SKPs
# take the default printer if asked
# have a look at the queue
# let the user have a look
# get back to SKP menu
# and stop
```

Example 2

"Unattended Automatic Backup"

Line type in System Administration should be Dial-up.
When LOGIN is activated, the PC will wait for the remote
system to connect to it. When the remote system has
connected to it, the PC will log on and backup all the
files in the directory /backdir.

ADMIN

SELECT "2" # install dial-up system

RETURN

LOGIN

"spider1" # send the password

TRANSFER

BACKUP # activate backup

"/backdir/*.*)" # all files in directory /backdir

"/user/pc" # to backup structure in /user/pc

CR # take default backup directory

"Y" # Delete all files in that directory

before backup

RETURN # back to main Menu

DISCONNECT # break the connection

DONE

TM220 Emulation

3

1875

TM220 Emulation

Introduction

PC Interconnect allows your PC to emulate a Motorola TM220 terminal — the standard terminal for the UNIX Series 8000 — and thus access all the UNIX host applications without modification.

To do this you must first set up the Terminal Type (in the System Administration Menu) as TM220. Once you have done this, select F2 from the System Options Menu to enter TM220 terminal mode. You may now access the UNIX host over a standard RS232 link and your PC will appear just like a TM220 to the UNIX host. Matching the performance of the TM220 on the PC involves emulating:

- the TM220 keyboard on the PC keyboard
- the operation of the TM220 screen on the PC screen

1 TM220 Emulation Keyboard Emulation

Once you are in TM220 terminal mode, press Alt/h to display the keyboard mapping between the PC and the TM220.

- The QWERTY keyboard is the same for both.
- Each TM220 function key may be accessed by simultaneously pressing the Alt key and the appropriate numeric key on the top row of the PC keyboard.
- Dedicated function keys on the TM220 are mapped to the PC function keypad as follows:

Function Keys

Status line: ↓

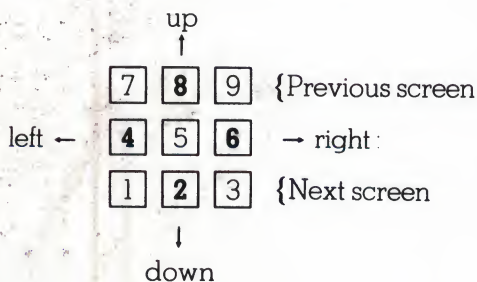
F1 —	F1	F2	— F2
F3 —	F3	F4	— F4
F5 —	F5	F6	— F6
F7 —	F7	F8	— F8
F9 —	F9	F10	— F10

Status line: ↑

F11 —	F1	F2	— F12
F13 —	F3	F4	— F14
(Help) F15 —	F5	F6	— F16 (Do)
F17 —	F7	F8	— F18
F19 —	F9	F10	— F20

The Function key set is toggled using ALT/ESC.

- TM220 cursor control keys are mapped to the following keys on the PC numeric island when NUMLOCK is OFF.



TM220 Emulated Key Positions

PC Key	TM220 Key Emulated
ALT 1	PF1
ALT 2	PF2
ALT 3	PF3
ALT 4	PF4
←	DEL
↵	ENTER and RETURN
Enter ← on PC/AT	ENTER and RETURN
CTL h	Backspace on character non-destruct
ESC	Not on TM220 but essential key for vi editor.
Not available in emulator	Compose character

Auxiliary Keypad

+	Select (NUMERIC LOCK ON)
-	Find (NUMERIC LOCK ON)
Del	Remove (default is UNIX interrupt) (NUMERIC LOCK OFF)
Ins	Insert here (NUMERIC LOCK OFF)

NOTE

TM220 functions not implemented: 132 columns, bit mapped graphics, programmable function keys.

System Administration Introduction

The **PC Interconnect** System Administration facility allows you to set up the system and communications parameters in a configuration that controls the link between your PC and the UNIX host.

The system supports an unlimited number of configurations and you may use the three System Administration menus to tailor a configuration most suited to your needs.

- The System Administration Summary Menu displays a list of your configurations and allows you to access the system administration options — see chapter 1 of this section.
- The System Configuration Menu allows you to set up system parameters for a configuration — see chapter 2 of this section.
- The Communications Setup Menu (accessed from the System Configuration Menu) allows you to set up communication parameters for a configuration — see chapter 3 of this section.
- With one exception (SELECT Configuration), there are no Soft Key Programming keywords for any of the System Administration functions.
- Chapter 4 of this section contains System Administration examples.

1 System Administration Summary Menu

Select F6 from the System Options Menu to access the System Administration module.

The system then displays the System Administration Summary Menu.

MOTOROLA
SYSTEM ADMINISTRATION SUMMARY MENU

System Number	System Name	System Description
1	Server	Network File Server for PCs
2	Entryway	Provide access to Entryway
3		
→ 4	PCdev	Direct TM220 connection
5	On-line	On-line Service, 1200 dial-up

F1 EDIT Configuration

F3 CREATE Configuration

F5 MODIFY Configuration

F2 SELECT Configuration

F4 REMOVE Configuration

F10 RETURN to Main Menu

Status: 5 Configuration(s) Available

SELECT FUNCTION KEY

available configurations, the
arrow indicates the
configuration currently in use

System Administration options

number of available configurations

System Administration Summary

EDIT Configuration

Function:	EDIT Configuration
Menu:	System Administration Summary
Function key:	F1

This option allows you to edit any one of the available system configurations.

Select F1 from the Summary Menu. When prompted, enter the number of the configuration you wish to edit — or press RETURN to edit the current configuration.

The System Configuration Menu is displayed — you may now use this menu to edit the system parameters for the configuration you have selected. See chapter 2 below.

System Administration Summary

SELECT Configuration

Function:	SELECT Configuration
Menu:	System Administration Summary
Function key:	F2
SKP keyword:	SELECT

This option allows you to select any of the listed configurations as the current configuration.

Select F2 from the Summary Menu and enter the number of the configuration you wish to install.

Note that SELECT Configuration is the only System Administration option you can use in an SKP.

System Administration Summery

CREATE Configuration

Function.	CREATE Configuration
Menu:	System Administration Summary
Function key:	F3

Select F3 from the Summary Menu to create a new configuration. You are then prompted to enter the System Name and the System Description for the new configuration — these will subsequently appear in the Summary Menu.

You are then offered the option of using another configuration as a guide:

Do You Wish to Use Another Configuration as a Guide <Y/N>?

If you answer Y, you are prompted to enter the number of the configuration you wish to use; if you answer N, a default configuration is set up.

You are then presented with the System Configuration Menu which allows you to edit the configuration.

System Administration Summary

REMOVE Configuration

Function: REMOVE Configuration
Menu: System Administration Summary
Function key: F4

Select F4 and, when prompted, enter the number of the configuration you wish to remove.

Note that you may not REMOVE the current configuration.

System Administration Summary

MODIFY Configuration

Function: MODIFY Configuration
Menu: System Administration Summary
Function key: F5

This option allows you to change the System Name and System Description of a configuration.

Select F5 and enter the number of the configuration you wish to modify. When prompted, enter the new System Name and System Description.

2 System Administration System Configuration Menu

Once you have selected to EDIT an existing configuration or to CREATE a new one, you are presented with the System Configuration Menu.

PC INTERCONNECT System Configuration Menu			
System: 4		Description: Direct TM220 Connection	
F1	Login Name	[pc]	F2 Node Name[]
F3	Line Type	[DIRECT]	F4 Tel # []
F5	Printer-1	[cpr]	F6 Printer-2 []
F7	Translate	[ON]	F8 Terminal Type [TM220]
F9	Communications	Setup Menu	F10 RETURN to Summary Menu
UNIX System		: PCdev [PCdev]	UNIX Username : paul
UNIX Directory		: /user/paul	
PC Directory		: C:\	
Status : System Configuration Options			
SELECT FUNCTION KEY			

System Configuration

Login Name

Function:	Login Name
Menu:	System Configuration
Function key:	F1

Select F1 from the System Configuration menu and enter the login name (username) you wish to use for Automatic Login. Your login name must be a valid username recognized by the UNIX host.

System Configuration

Node Name

Function:	Node Name
Menu:	System Configuration
Function key:	F2

Select F2 from the System Configuration Menu and enter the registered network name of the system you wish to access.

You do not need this option unless you are using **PC Interconnect** to connect through a network.

System Configuration

Line Type

Function:	Line Type
Menu:	System Configuration
Function key:	F3

Select F3 from the System Configuration menu to specify the type of link you wish to use to connect to the UNIX host. The system responds by requesting you to select one of the following options:

DIRECT	Direct RS232 link
LEASED	Leased line with modems
DIAL-UP	Dial-up line with modems
4020	Codex 4020 Entryway

A unique abbreviation is enough to select the option appropriate to your connection — for example, DIR for DIRECT.

System Configuration

Telephone Number (or Network Address)

Function:	Tel # (or Network Address)
Menu:	System Configuration
Function key:	F4

Select F4 from the System Configuration menu and, when prompted, enter the telephone number to be used for a DIAL-UP or LEASED line connection.

If you have specified Line Type as 4020 this field is Network Address. In this case you are prompted to enter the address of the network node to which **PC Interconnect** is to be connected.

System Configuration

Printer

Function: Printer 1 / Printer 2
Menu: System Configuration
Function key: F5 / F6

F5 and F6 may be used to identify one UNIX printer each. Select one of them and enter the name of the printer when prompted. The printer name may not be longer than 30 characters and must be a name recognized by the UNIX host — for example: console, lp, lp0 etc.

System Configuration

Translate

Function: Translate
Menu: System Configuration Menu
Function key: F7

The Translate field may be ON (for reciprocal mapping of character sets between the Motorola S8000 and the PC) or OFF.

Select F7 and enter ON or OFF.

See Appendix D for details on character mapping.

System Configuration

Terminal Type

Function:	Terminal Type
Menu:	System Configuration
Function key:	F8

PC Interconnect supports the emulation of two terminal types: VT100 and TM220.

Select F8 from the System Configuration Menu and, when prompted, enter VT100 or TM220.

System Configuration

Access to the Communications Setup Menu

Function:	Communications Setup Menu
Menu:	System Configuration
Function key:	F9

Select F9 from the System Configuration Menu to gain access to the Communications Setup Menu — see below for details of this menu.

3 System Administration Communications Setup Menu

The Communications Setup Menu enables you to specify the communications parameters that control the link between the PC and the UNIX host.

Select F9 from the System Configuration Menu to access the Communications Setup Menu.

PC INTERCONNECT Communications Setup Menu			
System: 4		Description: Direct TM220 Connection	
F1	Baud Rate	[9600]	F2 Data Bits [8]
F3	Parity Checking	[NONE]	F4 Stop Bits [1]
F5	XON/XOFF Protocol	[ON]	F6 Modem Type []
F7	Idle Timeout	[0]	F8 Break Length [500 ms]
F9	Modem Timeout	[30]	F10 RETURN to System Menu
UNIX System : PCdev [PCdev]		UNIX Username : paul	
UNIX Directory : /user/paul			
PC Directory : C:\			
Status : RS232 Communications Options			
SELECT FUNCTION KEY			

Communications Setup

Baud Rate

Function: Baud Rate
Menu: Communications Setup
Function key: F1

Baud Rate specifies the line speed (in bits per second) of the PC-UNIX link. For DIRECT and 4020 lines, this is usually set to 9600; for lines using modems it is usually set to 1200 or 2400 — but this depends on the type of modem used.

Select F1 from the Communications Setup Menu and then enter one of the options from the following list:

9600 4800 2400 1200 600 300

Communications Set

Data Bits

Function:	Data Bits
Menu:	Communications Setup
Function key:	F2

Select F2 from the Communications Setup Menu to specify the number of data bits (7 or 8) per character.

You must specify 8 data bits if you wish to use character mapping.

The Motorola S8000 machines are usually set up for 8 data bits per character.

Function: Parity Checking
Menu: Communications Setup
Function key: F3

Parity Checking is an error detection technique for data transfer.

Select F3 from the Communications Setup Menu and then specify the parity as None, Odd or Even.

The Motorola S8000 machines are usually set for None.

Communications Setup

Stop Bits

Function:	Stop Bits
Menu:	Communications Setup
Function key:	F4

Select F4 from the Communications Setup Menu to specify the number of stop bits (1 or 2) per character.

The Motorola S8000 machines are usually set for 1 stop bit.

Communications Setup

XON/XOFF Protocol

Function: XON/XOFF Protocol
Menu: Communications Setup
Function key: F5

XON/XOFF Protocol controls the rate of data transfer by using special characters to stop and start transmission in certain circumstances.

Select F5 from the Communications Menu. Set the XON/XOFF Protocol to ON if both the PC and the UNIX host are equipped to recognize these special characters; set it to OFF if they are not.

Communications Setup

Modem Type

Function:	Modem Type
Menu:	Communications Setup
Function key:	F6

The characteristics of the modems supported by **PC Interconnect** are contained in a special file called `pci.mod` (see Section 6, Technical Reference).

Default modems supported are Hayes, MX2400 and the generic manual modem 'dumb', but you may modify the `pci.mod` file to include the modem of your choice.

Select F6 from the Communications Setup Menu and enter the name of the modem you wish to use.

Communications Setup

Idle Timeout

Function:	Idle Timeout
Menu:	Communications Setup Menu
Function key:	F7

Idle Timeout is the length of time (in minutes) that a line remains idle before disconnecting itself.

Select F7 from the Communications Setup Menu and enter the number of minutes for the Idle Timeout. This option is useful as a precaution against large telephone bills.

Communications Setup

Break Length

Function:	Break Length
Menu:	Communications Setup
Function key:	F8

The Break Length is the length of time (in milli-seconds) that it takes to transmit the break sequence (i.e. simultaneous depression of the CTRL and BREAK keys) to the UNIX host.

Select F8 from the Communications Setup Menu and enter the Break Length — a common value for this is 500.

Communications Setup

Modem Timeout

Function: Modem Timeout
Menu: Communications Setup
Function key: F9

The Modem Timeout is the length of time (in seconds) an auto-dial modem may take to make a call.

Select F9 from the Communications Setup Menu and enter the Modem Timeout value — a common value is 50.

Communications Setup

RETURN to System Configuration Menu

Function:	RETURN to System Configuration Menu
Menu:	Communications Setup
Function key:	F10

Select F10 from the Communications Setup Menu to return to the System Configuration Menu.

4 System Administration Examples

One example is offered for each of the line types you may use with **PC Interconnect**: DIRECT, DIAL-UP, LEASED and 4020.

The following System Administration examples consist of the System Configuration Menu and the Communications Setup Menu for each line type (DIRECT, DIAL-UP, LEASED and 4020). Each field is filled in as appropriate.

DIRECT Connection

PC INTERCONNECT System Configuration Menu

System: 4

Description: Direct TM220 Connection

F1 Login Name	[pc]	F2 Node Name	[]
F3 Line Type	[DIRECT]	F4 Tel #	[]
F5 Printer -1	[cpr]	F6 Printer -2	[lp]
F7 Translate	[ON]	F8 Terminal Type	[TM220]
F9 Communications Setup Menu		F10 RETURN to Summary Menu	

UNIX System : PCdev [PCdev]

UNIX Username : paul

UNIX Directory : /user/paul

PC Directory : C:\

Status : System Configuration Options

SELECT FUNCTION KEY

PC INTERCONNECT Communications Setup Menu

System: 4

Description: Direct TM220 Connection

F1 Baud Rate	[9600]	F2 Data Bits	[8]
F3 Parity Checking	[NONE]	F4 Stop Bits	[1]
F5 XON/XOFF Protocol	[ON]	F6 Modem Type	[]
F7 Idle Timeout	[30]	F8 Break Length	[]
F9 Modem Timeout	[]	F10 RETURN to Summary Menu	

UNIX System : PCdev [PCdev]

UNIX Username : paul

UNIX Directory : /user/paul

PC Directory : C:\

Status : RS232 Communication Options

SELECT FUNCTION KEY

DIAL-UP Line Connection

PC INTERCONNECT System Configuration Menu

System: 4

Description: Direct TM220 Connection

F1 Login Name	[pc]	F2 Node Name	[]
F3 Line Type	[DIAL-UP]	F4 Tel #	[021 80266]
F5 Printer -1	[cpr]	F6 Printer -2	[lp]
F7 Translate	[ON]	F8 Terminal Type	[TM220]
F9 Communications Setup Menu		F10 RETURN to Summary Menu	

UNIX System : PCdev [PCdev]

UNIX Username : paul

UNIX Directory : /user/paul

PC Directory : C:\

Status : System Configuration Options

SELECT FUNCTION KEY

PC INTERCONNECT Communications Setup Menu

System: 4

Description: Direct TM220 Connection

F1 Baud Rate	[1200]	F2 Data Bits	[8]
F3 Parity Checking	[NONE]	F4 Stop Bits	[1]
F5 XON/XOFF Protocol	[ON]	F6 Modem Type	[HAYES]
F7 Idle Timeout	[30]	F8 Break Length	[500 ms]
F9 Modem Timeout	[30]	F10 RETURN to Summary Menu	

UNIX System : PCdev [PCdev]

UNIX Username : paul

UNIX Directory : /user/paul

PC Directory : C:\

Status : RS232 Communication Options

SELECT FUNCTION KEY

LEASED Line Connection

PC INTERCONNECT System Configuration Menu

System: 4

Description: Direct TM220 Connection

F1	Login Name	[pc	]	F2	Node Name	[]
F3	Line Type	[LEASED	]	F4	Tel #	[021 501566]
F5	Printer -1	[cpr	]	F6	Printer -2	[lp]
F7	Translate	[ON	]	F8	Terminal Type	[TM220]	
F9	Communications Setup Menu			F10	RETURN to Summary Menu		

UNIX System : PCdev [PCdev]

UNIX Username : paul

UNIX Directory : /user/paul

PC Directory : C:\

Status : System Configuration Options

SELECT FUNCTION KEY

PC INTERCONNECT Communications Setup Menu

System: 4

Description: Direct TM220 Connection

F1	Baud Rate	[1200	]	F2	Data Bits	[8]
F3	Parity Checking	[NONE	]	F4	Stop Bits	[1]
F5	XON/XOFF Protocol	[ON	]	F6	Modem Type	[MX2400]	
F7	Idle Timeout	[30	]	F8	Break Length	[500 ms]	
F9	Modem Timeout	[30	]	F10	RETURN to System Menu		

UNIX System : PCdev [PCdev]

UNIX Username : paul

UNIX Directory : /user/paul

PC Directory : C:\

Status : RS232 Communication Options

SELECT FUNCTION KEY

PC INTERCONNECT System Configuration Menu**System: 4****Description: Direct TM220 Connection**

F1 Login Name	[pc]	F2 Node Name	[econ-stat]
F3 Line Type	[4020]	F4 Tel #	[3214569876]
F5 Printer -1	[cpr]	F6 Printer -2	[lp]
F7 Translate	[ON]	F8 Terminal Type	[TM220]
F9 Communications Setup Menu		F10 RETURN to Summary Menu	

UNIX System : PCdev [PCdev]

UNIX Username : paul

UNIX Directory : /user/paul

PC Directory : C:\

Status : System Configuration Options

SELECT FUNCTION KEY**PC INTERCONNECT Communications Setup Menu****System: 4****Description: Direct TM220 Connection**

F1 Baud Rate	[9600]	F2 Data Bits	[8]
F3 Parity Checking	[NONE]	F4 Stop Bits	[1]
F5 XON/XOFF Protocol	[ON]	F6 Modem Type	[]
F7 Idle Timeout	[30]	F8 Break Length	[]
F9 Modem Timeout	[30]	F10 RETURN to System Menu	

UNIX System : PCdev [PCdev]

UNIX Username : paul

UNIX Directory : /user/paul

PC Directory : C:\

Status : RS232 Communication Options

SELECT FUNCTION KEY

System Installation Introduction

PC Interconnect contains software for both the PC and the UNIX host.

Refer to the PC SRG for instructions on how to install **PC Interconnect** on the PC and how to install cables for the different connections supported by **PC Interconnect**.

Refer to the 8000 System Release Guide (RSG) for details on how to install PC Interconnect on the UNIX host.

This chapter gives details of the MODEMCAP file, pci.mod. This file contains a definition of capabilities for the range of modems that can interface with **PC Interconnect**. You may add to this file or modify its contents to suit the behavior of the modems you wish to use with your PC.

Format of pci.mod

The pci.mod file consists of a list of modem definitions in the form:

modem name : capability list

Each such definition must begin at the start of a new line. A single definition, however, may extend over many lines: in this case a backslash should be entered as the last character before the carriage return in each line except the last.

modem name is a unique name used to identify each modem to **PC Interconnect**. Names are composed of alphanumeric characters: both upper and lower case characters may be used, but the system will not distinguish between them. For example, the name mx2400 is not distinguished from MX2400.

*Note that the MODEM TYPE field in the **PC Interconnect** Communications Setup Menu must correspond to one of the modem names in the pci.mod file; otherwise, if the line type defined requires a modem interface (i.e. DIAL-UP or LEASED), an error will occur when the system tries to control the modem.*

capability list is a list of definitions which describe how the particular modem works and the commands that the PC may send to it. Each definition is in the form:

capability name = string:

Capability names are listed in the following section. Strings can be:

- a) a sequence of printable characters, enclosed in either single or double quotes.

If the sequence is to contain single or double quotes, then the required character must be preceded by a backslash. Similarly, a backslash, if required, should be preceded by another backslash.

- b) the number that represents the ASCII code for the required character.

Octal numbers must begin with zero, hexadecimal numbers must begin with zero followed by an x (upper or lower case), and any sequence of numbers beginning with a non-zero digit is assumed to be decimal. For example, 12 is read as the decimal value twelve, 012 is read as octal twelve (decimal ten), and 0x12 is read as hexadecimal twelve (decimal eighteen).

- c) standard ASCII mnemonics for control characters. These should be entered without any enclosing quotes or special characters. For example, ETX will be interpreted as Ctrl/C (Hexadecimal 03).

If a string has more than one of the above, each must be separated by a space. The string must be terminated by a colon.

Details of Capabilities

The modem capabilities are in three groups: ones describing the modem itself, ones concerning information going from the PC to the modem and ones concerning information going from the modem to the PC.

The MODEMCAP File

	Capability name	Meaning	String Values	Description
MODEM DESCRIPTIONS	mt	Modem Type	'A' 'M'	Indicates autodial Indicates manual dial
	hdx	half duplex	None	One or other of these is chosen to indicate the transmission system. Note that no equal sign or string is expected when they are being defined.
	fdx	full duplex	None	
PC TO MODEM CAPABILITIES	sn	Start Number		Tells the modem to accept subsequent data as dial digits until the End Number character is sent.
	en	End Number		Tells the modem that a dial sequence is completed.
	sd	Start Dialling		Tells the modem to dial the number.
	pn	Pause Now		Tells the modem to pause.
	ps	Pause Specifier		Tells the modem that the length of the pause is about to be specified. Only relevant if the modem allows variable time between dial digits.
	pl	Pause Length		See above.
	as	Abandon Sequence		Tells the modem to abandon the call attempt.

The MODEMCAP File

MODEM TO PC CAPABILITIES

Capability name	Meaning	String Values	Description
ar	Abandon call and retry		Tells the PC to abandon the call and try again.
by	Busy		Tells the PC that the number number called is engaged.
ce	Comms Error		Non-specific problem on the line.
fe	Framing Error		Call failed due to framing error.
or	OverRun		Call failed due to overrun.
ds	Data set Status		Call successful.

Examples

sd = ETX STX 0x14 "MT" EOT:

ce = '1' CR 0x31 CR:

A typical entry would consist of a number of capability lists:

\n

supermodem:MT = 'A':AR = NUL:SN = STX:EN = ETX:PS = 015:PL = 012\

PN = ;:AS = STX EOT EOX ETX:BY = 042:FE = 068\

OR = 070:DS = 065:FDX

Appendix A

Keynames for SKPs

The following list contains all the keynames that may be used as keywords to invoke explicit keystrokes within **PC Interconnect**.

BS	F1	F7	LEFT
CR	F2	F8	PGDN
DEL	F3	F9	PGUP
DOWN	F4	F10	RIGHT
END	F5	HOME	TAB
ESC	F6	INS	UP

Any of these keys may be preceded by Alt, CONTROL or SHIFT — for example: Alt F10, CONTROL HOME, CONTROL ESC.

Note that the CR key (Carriage Return) is marked ↵ on the PC keyboard.

Appendix B

Ctrl and ESC Sequences for VT100 and TM220 Emulation

VT100 and TM220 Ctrl Sequences

Function	Mnemonic	Octal Code
Transmit answerback message	ENQ	005
Sound bell tone from keyboard	BEL	007
Backspace one character	BS	010
Move to next horizontal tab	HT	011
Line Feed/New Line	LF	012
Interpreted as LF	VT	013
Interpreted as FF	FF	014
Move to left margin	CR	015
Resume data transmission	XON	021
Stop data transmission	XOFF	023
Abort escape sequence	CAN	030
Interpreted as CAN	SUB	032

Appendix B

VT100 ESC Sequences

Function	Mnemonic	Escape Sequence
Cursor Up	CUU	ESC [PnA
Cursor Down	CUD	ESC [PnB
Cursor Right (Forward)	CUF	ESC [PnC
Cursor Left (Backward)	CUB	ESC [PnD
Direct Cursor Addressing	CUP	ESC [P1;PcH
	HVP	ESC [P1;Pcf
Index	IND	ESC D
New Line	NEL	ESC E
Reverse Index	RI	ESC M
Save Cursor and Attributes	DECSC	ESC 7
Restore Cursor and Attributes	DECRC	ESC 8
Character Attributes	SGR	ESC [Ps;..Psm
Erase cursor to end of line	EL	ESC [K or OK
Erase start of line to cursor	EL	ESC [1K
Erase line containing cursor	EL	ESC [2K
Erase cursor to end of screen	ED	ESC [J or OJ
Erase screen to cursor	ED	ESC [1J
Erase entire screen	ED	ESC [2J
Set Scrolling Region	DECSTBM	ESC [Pt;Pbr
Select UK G0 Character Set	SCS	ESC (A
Select UK G1 Character Set	SCS	ESC)A
Select ASCII G0 Character Set	SCS	ESC(B
Select ASCII G1 Character Set	SCS	ESC)B
Select Special Graphics G0 Set	SCS	ESC(0
Select Special Graphics G1 Set	SCS	ESC)0
Set tabs at current column	HTS	ESC H
Clear tabs at current column	TBC	ESC [g or 0g
Clear all tabs	TBC	ESC [3g
Set New line mode	SM LNM	ESC [20h

Appendix B

Function	Mnemonic	Escape Sequence
Reset Line feed mode	RM	ESC [20l
Set Screen Reverse mode	SM DECSCNM	ESC [?5h
Reset Screen Normal mode	RM	ESC [?5l
Set Relative Origin mode	SM DECOM	ESC [?6h
Reset Absolute Origin mode	RM	ESC [?6l
Set Cursor Keys Mode	SM DECCKM	ESC [?1h
Reset Cursor Keys Mode	RM DECCKM	ESC [?1l
Keypad Application Mode	DECKPAM	ESC =
Keypad Numeric Mode	DECKPNM	ESC >
Load LEDS	DECLL	ESC [Psq
Invoke Cursor Position Report	DSR	ESC [6n
Response to Request	CPR	ESC [P1;PcR
Invoke Status Report	DSR	ESC [5n
Response to Request	DSR	ESC [On or 3n
Invoke What Are You	DA	ESC [c
Response to Request	DA	ESC [?1;Oc
Identify Terminal	DECID	ESC Z

Appendix B

TM220 ESC Sequences

The following table defines Escape sequences on the **PC Interconnect** TM220 Terminal Emulator.

Function	Mnemonic	Escape Sequence
Cursor Back	CUB	CSI Pn D
Cursor Down	CUD	CSI Pn B
Cursor Forward	CUF	CSI Pn C
Cursor Position	CUP	CSI Pl ; Pc H
Cursor Position (Home)	CUP	CSI H
Cursor Up	CUU	CSI Pn A
Device Attributes	DA	CSI c
— emulator will respond		
Data Characters	DCH	CSI Pn P
Device Control String	DCS	ESC P
Application Keypad Mode	DECKPAM	ESC =
Numeric Keypad Mode	DECKPNM	ESC >
Identification	DECID	ESC Z
— emulator will respond		
Printer Extent Mode	DECPEX	
Print full screen		CSI ? 1 9 h
Print scrolling region		CSI ? 1 9 l
Print Termination Character	DECPFF	
Select form feed		CSI ? 1 8 h
No termination character		CSI ? 1 8 l
Cursor Key Mode Selection	DECCKM	
Generate control functions		CSI ? 1 h
Generate ANSI key sequences		CSI ? 1 l
Text Cursor Enable	DECTCEM	
Make cursor visible		CSI ? 2 5 h
Make cursor not visible		CSI ? 2 5 l
Origin Mode (Home position)	DECOM	
Top of user scrolling reg.		CSI ? 6 h
Upper left of screen		CSI ? 6 l

Appendix B

Function	Mnemonic	Escape Sequence
Auto Wrap Mode	DECAWM	
Select auto wrap		CSI ? 7 h
Turn of auto wrap		CSI ? 7 l
Character Set Mode	DECNRCM	
Select multinational mode		CSI ? 4 2 l
Selective Erase in Display	DECSER	
Cursor to end screen		CSI ? 0 J
		CSI ? J
Begin screen to cursor		CSI ? 1 J
Whole screen		CSI ? 2 J
Selective Erase in Line	DECSEL	
Cursor to EOLN		CSI ? 0 K
		CSI ? K
BOL to cursor		CSI ? 1 K
Whole line		CSI ? 2 K
Restore Cursor and Attributes	DECRC	ESC 8
Save Cursor and Attributes	DECSC	ESC 7
Set Top and Bottom Margins	DECSTBM	CSI Pt ; Pb r
Compatibility Level	DECSCL	
Erasing off		CSI 0 " p
Erasing on		CSI 1 " p
VT100 mode (level 1)		CSI 6 1 " p
VT220 mode (level 2)		CSI 6 2 " p
VT220 8 bit comms		CSI 6 2 ; 0 " p
VT220 8 bit comms		CSI 6 2 ; 2 " p
VT220 7 bit comms		CSI 6 2 ; 1 " p
VT220 Motorola mode		CSI 6 2 ; 9 " p
Reset Default Margins		CSI r
Delete Line	DL	CSI Pn M

Appendix B

Function	Mnemonic	Escape Sequence
Device Status Report (Term)	DSR	
Terminal OK?		CSI 5 n
Current cursor position		CSI 6 n
— emulator will respond		
Device Status Report (Printer)	DSR	CSI ? 1 5 n
— emulator will respond		
Erase Character	ECH	CSI Pn X
Erase in Display	ED	
Cursor to end screen		CSI 0 J
		CSI J
Begin screen to cursor		CSI 1 J
Whole screen		CSI 2 J
Erase in Line	EL	
Cursor to EOLN		CSI 0 K
		CSI K
BOL to cursor		CSI 1 K
Whole line		CSI 2 K
Horizontal Tab Set	HTS	ESC H
Horizontal and Vertical Position	HVP	CSI Pl ; Pc f
Horizontal and Vertical (Home)	HVP	CSI f
Insert Character	ICH	CSI Pn @
Insert Line	IL	CSI Pn L
Index	IND	ESC D
Lock Shift G1, Right	LS1R	ESC ~
Lock Shift G2	LS2	ESC n
Lock Shift G2, Right	LS2R	ESC }
Lock Shift G3	LS3	ESC o
Lock Shift G3, Right	LS3R	ESC !
Motorola Mode		CSI N

Appendix B

Function	Mnemonic	Escape Sequence
LED Control		
All LEDs off		CSI 0 q
LED 0 on		CSI 1 q
LED 1 on		CSI 2 q
LED 2 on		CSI 3 q
LED 3 on		CSI 4 q
Media Copy	MC	
Print full screen		CSI 0 i
		CSI i
Print control mode off		CSI 4 i
Print control mode on		CSI 5 i
Media Copy	MC	
Print current line		CSI ? 1 i
Auto print off		CSI ? 4 i
Auto print on		CSI ? 5 i
Next Line	NL	ESC E
Reverse Index	RI	ESC M
Reset Modes	RM	CSI Ps ; ... l
Ps=2 — Unlock keyboard		
Ps=4 P — Replace mode		
Ps=1 2 — Local echo on		
Ps=2 0 — No CR on LF/FF/VT		
Set Modes	SM	CSI Ps ; ... h
Ps=2 — Lock keyboard		
Ps=4 — Insert mode		
Ps=1 2 — Local echo off		
Ps=2 0 — Auto CR on LF/FF/VT		

Appendix B

Function	Mnemonic	Escape Sequence
Select Graphic Rendition Ps=0 — All attributes off Ps=1 — Increased intensity Ps=4 — Underscore on Ps=5 — Blinking Ps=7 — Reverse screen Ps=2 2 — Normal intensity Ps=2 4 — Not underlined Ps=2 5 — Not blinking Ps=2 7 — Reverse screen	SGR	CSI Ps ; ... m
Single Shift G2	SS2	ESC N
Single Shift G3	SS3	ESC O
Tabulation Clear Current tab	TBC	CSI 0 g CSI 2 g CSI 3 g
All tabs		

In the above table, CSI (Control Sequence Introducer) is defined as ESC [.

Function	Escape Sequence
Designate Hard Character Set as G0	ESC ({final}
Designate Hard Character Set as G1	ESC) {final}
Designate Hard Character Set as G2	ESC * {final}
Designate Hard Character Set as G3	ESC + {final}

Appendix B

The following table defines the final character to use corresponding to the desired international character set. The domestic version is always ASCII (US).

Character Set	Final Character
ASCII (US)	B
DEC Supplemental	©
DEC Special Graphics	<
British (UK)	A
Dutch	4
Finnish	C or 5
French	R
French Canadian	Q
German	K
Italian	Y
Norwegian/Danish	E or 6
Spanish	Z
Swedish	H or 7
Swiss	=

Appendix B

Appendix B

TM220 Exceptions

The following Escape sequences are treated as exceptions by the **PC Interconnect** TM220 Emulator.

Function	Mnemonic	Escape	Action
Double height line	DECDHL	ESC #3	Ignored
		ESC #4	Ignored
Single width line	DECSWL	ESC #5	Ignored
Double width line	DECDWL	ESC #6	Ignored
Display service personnel test pattern	DECALN	ESC #8	Ignored
Line transmit mode	DECLTM		
Transmit current line		CSI ? 1 1 h	Ignored
Transmit current page		CSI ? 1 1 l	Ignored
Tests	DECTST	CSI 4 ; Ps .. y	Ignored
Soft reset of terminal	DECSTR	CSI ! p	Ignored
Transmit termination mode	TTM	CSI 1 6 h	Ignored
Select TTM character	DECTTC	CSI Ph |	Ignored
Downline loadable character sets	DECDDL		Ignored
Column mode	DECCOLM		
132 Columns per line		CSI ? 3 h	Ignored
80 Columns per line		CSI ? 3 l	Default
Scrolling mode	DECSCLM		
Smooth scrolling		CSI ? 4 h	Ignored
Jump scrolling		CSI ? 4 l	Default
Screen mode	DECSCNM		
Select reverse video		CSI ? 5 h	Ignored
Select normal screen		CSI ? 5 l	Default
Auto repeat	DECARM		
Select auto repeat after 0.5 seconds		CSI ? 8 h	Default
Turn off auto repeat		CSI ? 8 l	Ignored

Appendix B

Function	Mnemonic	Escape	Action
Character set mode	DECNRCM	CSI ? 4 2 h	Ignored
Hard reset of terminal	RIS	ESC c	Ignored
Select Graphic Rend.	SGR		
Display negative image		CSI 7 m	Reverses image
Display positive image		CSI 2 7 m	Reverses image
Select character attribute	DECSCA	CSI Ps " q	Ignored
Set 7 bit mode	S7C1T	ESC Sp F	Ignored
Set 8 bit mode	S8C1T	ESC Sp G	Ignored

Sequence from Host	Sequence from Emulator
Primary DA exchange	I am a vt101
CSI c	ESC [? 1 ; 0 c
ESC Z	As above
Secondary DA exchange	
CSI > c	Ignored
CSI > 0 c	Ignored
Are user defined keys locked?	Ignored
ESC [? 2 5 n	
What language keyboard?	Ignored
ESC [? 2 6 n	
Device status (terminal)	Returns ready status
CSI 5 n	CSI 0 n
Report cursor position	
CSI 6 n	CSI Pr ; Pc R
Device status (printer)	
CSI ? 1 5 n	If printer OK — CSI ? 1 0 n If printer down — CSI ? 1 1 n

Appendix B

AMPEX220 Exceptions

None of the AMPEX only sequences are processed by the emulator.

Function	Mnemonic	Escape	Action
Block mode	AMPEXBLK	CSI ? 1 0 h	Ignored
Scroll rate	AMPEXVSR	CSI Pn W	Ignored
Next page display	AMPEXNPD	CSI Pn U	Ignored
Previous page display	AMPEXPPD	CSI Pn V	Ignored
User line display			
Display		CSI 3 6 h	Ignored
Clear		CSI 3 6 l	Ignored
Auto page mode	AMPEXAP		
Turn on		CSI 3 7 h	Ignored
Turn off		CSI 3 7 l	Ignored

Appendix C

Character Mapping and Translation

CRLF Translations

Text files must be distinguished from Program files because of the different ways the UNIX host and the PC handle CRLF (Carriage Return/Line Feed) sequences. UNIX stores lines as a sequence of characters terminated by an LF. DOS stores lines as a sequence of characters terminated by a CRLF.

Because of this, it is necessary to perform an explicit LF to CRLF translation each time files are transferred from the UNIX to the PC. Similarly, a translation from CRLF to LF must be performed when files are transferred from the PC to the UNIX.

Such translations are not desirable in the case of Program or Binary Data Files — this is why it is necessary to specify whether a file you wish to transfer is *program* or *text*.

Appendix C

Character Mapping

The following chart catalogues the character mappings performed on data received and transmitted by **PC Interconnect**.

Motorola CS40 Private Character		Motorola CS40 Private Character	
PC Code	Set Code	PC Code	Set Code
20	0346	150	0310
21	0316	151	0306
128	0245	152	0367
129	0311	153	0250
130	0266	154	0254
131	0257	155	0320
132	0261	156	0315
133	0255	157	0357
134	0262	158	0356
135	0264	159	0355
136	0267	160	0256
137	0270	161	0272
138	0265	162	0277
139	0274	163	0307
140	0273	164	0275
141	0271	165	0247
142	0241	166	0354
143	0242	167	0353
144	0246	168	0322
145	0263	169	0372
146	0244	170	0360
147	0300	171	0200
148	0302	172	0201
149	0276	173	0321

Appendix C

Motorola CS40 Private Character		Motorola CS40 Private Character	
PC Code	Set Code	PC Code	Set Code
174	0365	204	21
175	0366	205	0214
176	0202	206	0215
177	0344	207	0216
178	0345	208	0217
179	0337	209	0220
180	0334	210	0221
181	0203	211	0222
182	0204	212	0223
183	0205	213	0224
184	0206	214	0225
185	0207	215	0226
186	0373	216	0227
187	0326	217	0331
188	0332	218	0323
189	0210	219	0230
190	0211	220	0231
191	0325	221	0232
192	0327	222	0233
193	0335	223	0234
194	0336	224	0303
195	0333	225	0305
196	0340	226	0343
197	0341	227	0376
198	0212	228	0362
199	0213	229	0235
200	0330	230	0364
201	0324	231	0347
202	0317	232	0253
203	20	233	0350

Appendix C

Motorola CS40 Private Character	
PC Code	Set Code

234	0351
235	0352
236	0374
237	0304
238	0252
239	0370
240	0251
241	0240
242	0243
243	0260
244	0236
245	0237
246	0361
247	0301
248	0303
249	0312
250	0371
251	0363
252	0375
253	0314
254	0342
255	0377

Appendix D

Line Signal Behaviour

PC Interconnect allows you to connect your PC to the UNIX host in 5 different ways:

- Direct connection
- Connection through a modem using a dial-up line
- Connection through a modem using a leased line
- Connection through a Codex Ethernet local area network, using the Codex 4020 entryway

PC Interconnect does not make use of all the RS232 signals and this appendix describes how **PC Interconnect** uses the RS232 signals for each type of connection.

The signals **PC Interconnect** uses are:

Circuit Name	CCITT	EIA Standard
Protective ground	101	AA
Signal ground	102	AB
Transmit data	103	BA
Receive data	104	BB
Request to send	105	CA
Clear to send	106	CB
Data set ready	107	CC
Data terminal ready	108.2	CD
Received line signal detect	109	CF

Appendix D

Direct Connection

On startup, **PC Interconnect** raises DTR.

None of the RS232 signals are checked during a session with the UNIX host.

When **PC Interconnect** disconnects from the UNIX host it drops DTR for half a second and then raises it again.

Dial-up Connection

On startup, **PC Interconnect** raises DTR.

When you attempt to make a connection (by selecting Automatic Login or Terminal Mode), **PC Interconnect** checks that DTR is high. If a connection had been made and broken previously, DTR may have been dropped.

If the PC is connected to an autodial modem, **PC Interconnect** then sends (to the modem) the commands to dial the number. If you use a manual modem, you must dial the number manually.

PC Interconnect then waits for DSR and DCD to go high. For autodialling modems, it waits the length of time specified in the Modem Timeout field of the Communications Setup Menu. For manual modems, it waits until the DSR and DCD are received, or until you enter Ctrl/Break to cancel the operation.

When sending data, **PC Interconnect** raises RTS and waits for CTS to go high.

If DSR or DTR goes low, the connection is assumed to be broken — this may be because the line has broken down or because the modem at the other end has broken the connection.

Once you request a disconnection, **PC Interconnect** drops DTR and this causes the modem to break the connection.

Appendix D

Leased Line

On start up, **PC Interconnect** raises DTR and the modem is expected to respond with DSR and DCD — assuming a permanent connection between the two modems on a leased line. If DSR and DCD are not high, then you may assume that the modem is not ready.

Once you select Automatic Login or Terminal Mode, PC Interconnect checks that DSR and DCD are high — if they are not, the connection cannot be made.

*If they go high when **PC Interconnect** is idle in the System Options Menu, **PC Interconnect** realizes that a connection has been made and allows the user to enter Terminal Mode or to activate Automatic Login.*

To disconnect the line, **PC Interconnect** drops DTR — the modem may drop DSR and DCD in response.

4020 Codex Entryway

PC Interconnect raises DTR on startup. The entryway is configured to:

- pulse DSR on disconnect
- monitor DTR high to low transitions

This means that the entryway ignores the DTR signal when the PC raises it. If the entryway is switched on it should provide the DSR signal.

When a connection attempt is made, **PC Interconnect** checks that DTR is high. It sends the command to connect to the remote system, followed by the name of the remote system.

If the network's name server is active, the entryway looks up the address of the remote resource and uses it to make the connection. If the connection is successful, the entryway responds with the string "connected". If the connection is not made, **PC Interconnect** retries once, this time using the address of the remote resource.

Appendix D

If the connection is broken during the session, the entryway drops DSR for a minimum of 60 milliseconds. This is detected by **PC Interconnect** and you are told that the connection has been broken.

To break the connection, **PC Interconnect** drops DTR and the entryway disconnects from the remote resource.

Appendix E

Installing PC Interconnect

Distribution Media

- Disk # 1 — 360 Kbytes floppy diskette without TM220 support.
- Disk # 2 — 360 Kbytes floppy diskette without Softkey Programs and Editor but with TM220 support.

PC Interconnect can be run from either distribution diskette. However, it is recommended that it be run from a fixed disk, if you have one, or from a backup copy of the distribution disk, if you do not have a fixed disk.

This appendix describes how to back up and install **PC Interconnect** on your personal computer with a fixed disk.

Your **PC Interconnect** distribution diskette is in a plastic jacket at the back of this manual. The **PC Interconnect** distribution diskette does not contain the DOS files needed to start the system and load the **PC Interconnect** programs.

PC Interconnect is copy-protected. You may use the distribution diskette to create backup and working copies for your own use only.

This appendix describes, step by step, how to back up your **PC Interconnect** distribution diskette and then install **PC Interconnect** on your fixed disk.

Follow these instructions to back up your **PC Interconnect** distribution diskettes and combine the **PC Interconnect** programs with DOS on your fixed disk. (For further information on the commands used in this procedure, refer to your **Disk Operating System** manual.)

We assume that you have set up a DOS partition on your fixed disk and have copied DOS into that partition.

For this procedure, you need the following:

- A personal computer with at least one double-sided diskette drive and a fixed disk.
- Two blank double-sided, double-density diskettes.
- Your **PC Interconnect** distribution diskettes, disk # 1 and disk # 2.

Making a Backup Diskette

1. Use a felt-tip pen and label the blank diskettes PC INTERCONNECT BACKUP, DISK # 1 (1st diskette) and DISK # 2 (2nd diskette).
2. Keeping the door open on diskette drive A, switch ON your system unit if you have not already done so. If the system unit is already ON, press and hold the CTRL and ALT keys; then press the DEL key. Release all three keys.

NOTE

Steps 1 through 4 bring up the DOS prompt. If your existing AUTOEXEC.BAT file causes your system to load some program other than DOS, bring up the DOS prompt C> and continue with step 5.

3. DOS asks for today's date; enter the date.
4. DOS asks for the time; enter the time.

A message similar to the following appears:

Microsoft MS-DOS version 2.11
Copyright 1981, 82, 83 Microsoft Corp.

C>

Appendix E

5. Type:

diskcopy a: a:

Press Enter (↵).

a. The following message appears:

Insert source diskette in drive A:

Strike any key when ready

6. Insert the **PC Interconnect** distribution disk #1 in drive A. For this procedure, use the **PC Interconnect** distribution diskette as your "source" diskette.

With only one diskette drive, you must exchange diskettes during the DISKCOPY procedure. A message appears on your screen when an exchange is needed.

Press any key. The "in use" light comes on while the **PC Interconnect** distribution diskette is read; the following message is then displayed:

Insert target diskette in drive A:

Strike any key when ready

7. Remove your **PC Interconnect** distribution diskette and insert the blank BACKUP diskette. Use the BACKUP diskette as the "target" diskette.

8. Press any key.

The "in use" light comes on while the BACKUP diskette is written. The screen continues to ask for the source and target diskettes until the copy is complete. Follow the messages on your screen until the following message appears:

Copy complete

Copy another (Y/N)?

9. Type:

n (if both disk # 1 and disk # 2 have been copied, otherwise type y and repeat steps 5a through 9 using distribution disk # 2 as source diskette).

Your **PC Interconnect** backup is complete. Store your original **PC Interconnect** distribution diskette in a safe place, and use the backup for the rest of the installation procedure.

First-Time Installation

To install **PC Interconnect** on the PC's fixed disk, follow steps 1 to 8:

1. Put DOS distribution disk # 1 into the PC drive. On the DOS prompt, enter the diskette drive containing the distribution copy of the software.

a: <RETURN>

2. Change the 'pci' directory of the distribution diskette by typing:

cd \pci <RETURN>

3. In response to the DOS prompt, enter

install a: <RETURN>

where "a" is the drive identifier where the produce is to be installed.

Appendix E

The message:

First Time Installation of PC Interconnect

***Making directories for x: \ pci and x: \ pci \ pciskp
If this is not what you want, hit CTRL/BREAK or
Strike a key when ready . . .***

will be displayed. It then calls another install script to copy the files to the **PC Interconnect** directory (\ pci).

4. The next message will appear:

```
*****
*
*          PC INTERCONNECT PC03.34 — Installation Diskette #1
*
*****
```

***The product will be installed on drive x:
If this is not what you want, hit CTRL/BREAK or
Strike a key when ready . . .***

Copying file — Please Wait

.
. .
.

5. If **PC Interconnect** is being installed for the first time then the script will install the new PC Interconnect Configuration file (pci.cnf).
6. When all files have been copied, the next message will appear:

PC INTERCONNECT Installation Diskette #1 Complete

***To install the PC INTERCONNECT Installation Diskette #2
Insert diskette and type:
install x:***

7. Remove the distribution diskette from the drive and store it safely for backup purposes. Put in distribution disk # 2 and enter the command on the DOS prompt:

install x: <RETURN>

Be sure to enter the same drive identifier "x" used in installing disk # 1. The message will appear:

```
*****
*
*          PC INTERCONNECT PC03.34 — Installation Diskette #1
*
*****
```

The product will be installed on drive x:
If this is not what you want, hit CTRL/BREAK or
Strike a key when ready . . .

Copying file — Please Wait

.
. .
.

8. When all files have been copied, the next message will appear:

PC INTERCONNECT Installation Complete

PC INTERCONNECT is now ready to run, just type "pci"

The files required for TM220 emulation and keyboard display will now be copied to drive x: and when the DOS prompt returns, the installation is over.

Upgrading an Existing System

Follow steps 1 through 8 in first-time installation section, replacing step 3 with step 1 described below, and step 5 with step 2:

1. In response to the DOS prompt, enter

install x: <RETURN>

where "x" is the drive identifier where the product is to be installed.

2. The install script will not update the PC Interconnect Configuration File (pci.cnf) on the PC with installed **PC Interconnect** software. The message:

During the installation the PC INTERCONNECT Configuration

File was not updated

To install the new PC INTERCONNECT Configuration File, type:

copy pci.cnf x: \ pci

will be displayed, indicating the configuration file was not updated.

Note that the configuration file being overwritten contains details of the host systems to which this PC can be connected. It is maintained entirely by **PC Interconnect** and has nothing to do with the system configuration file config.sys.

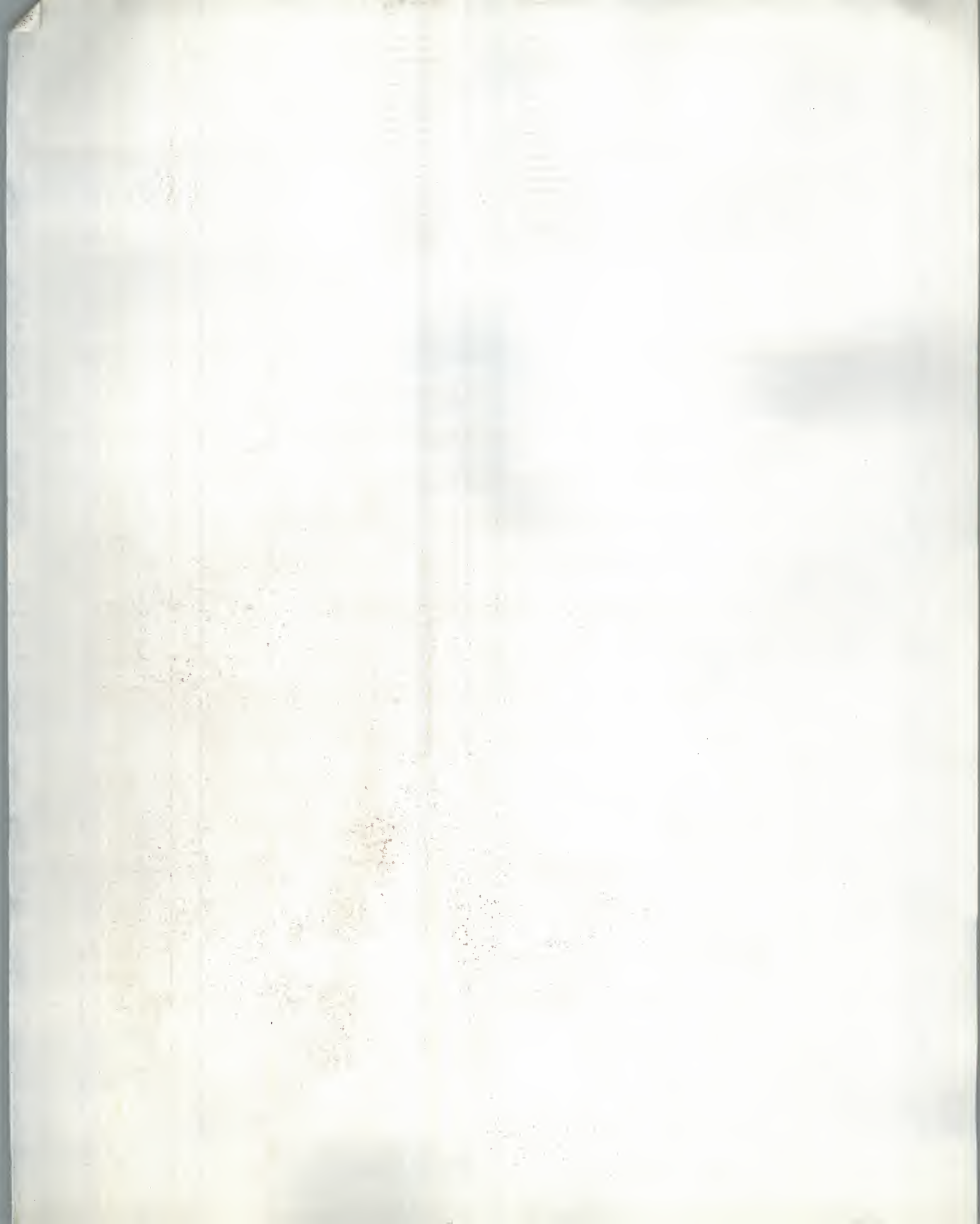
If you are installing on a PC which already had a previous configuration file, you may keep your configuration file and ignore this step. This is particularly desirable for users who have tailored their configuration file to suite their particular needs and who do not want to lose it.

Important Information for Using the Product

1. The following line must be inserted in the DOS file config.sys before attempting to use the product:

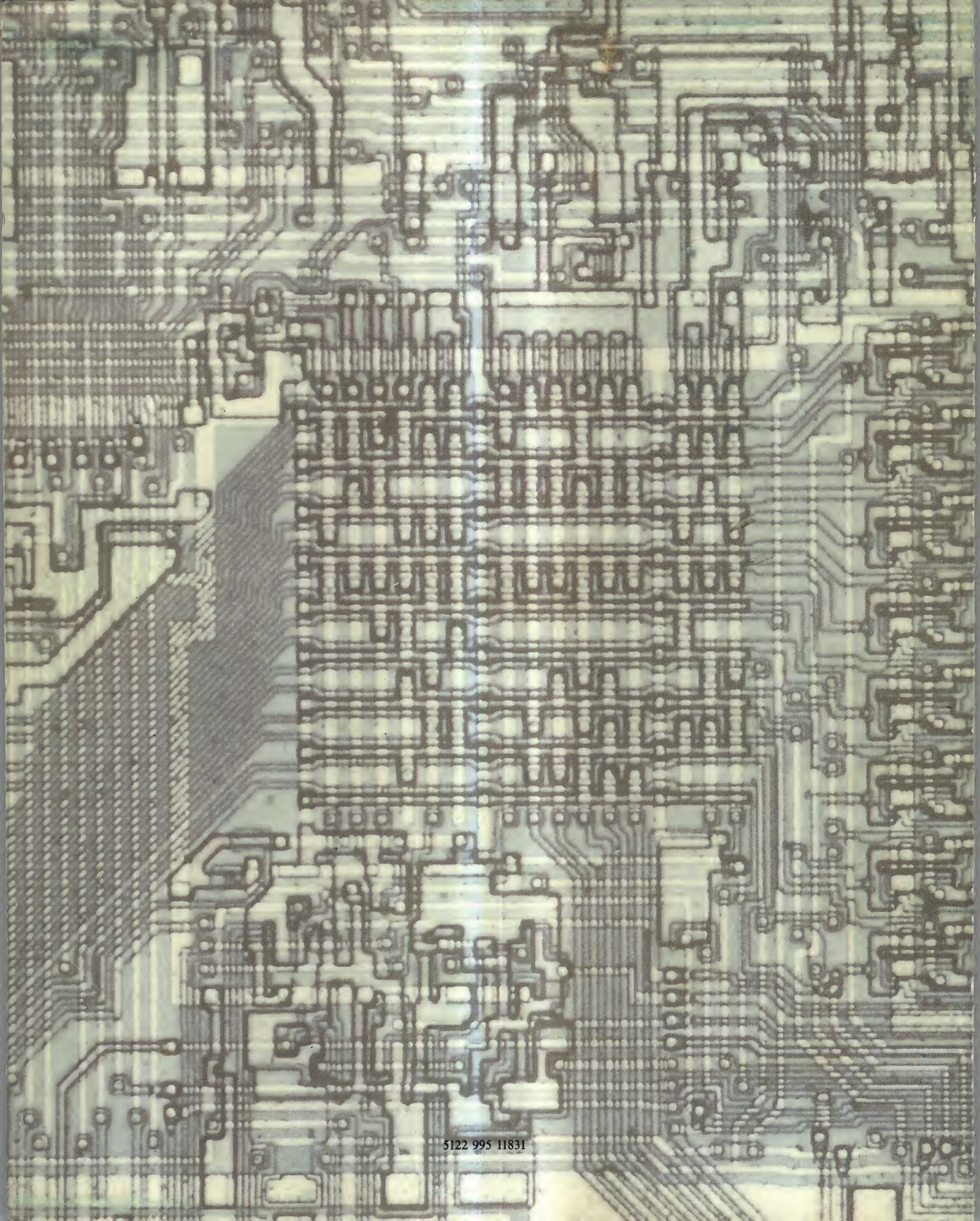
file=32

2. PC screen must be set to 80 column mode before using the product; some programs may set the screen to 40 column mode.









5122 995 11831